

NINTH EDITION,

Enlarged and Fully Revised to date.

PRACTICAL
POULTRY BREEDER
AND
FEEDER:

OR,
HOW TO MAKE POULTRY PAY.

BY
WILLIAM COOK.

Author of "The Book on Ducks, and how to make them pay;" "The Horse: its keep and management;" "Pheasants, Turkeys, and Geese: their management for pleasure and profit;" Editor and Proprietor of "The Poultry Journal;" Conductor of Poultry Department "Farm, Field and Fireside;" Weekly Contributor to "Poultry," &c.

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WILLIAM COOK.

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CONTENTS.

	PAGES.
GENERAL REMARKS	1—11
Poultry-keeping—Moral, sanitary, and financial benefits, combined with improved health—Personal attention for good results—Comparative advantages of town and country poultry-keepers—Poultry will pay—Poultry-keeping past and present—The author's work.	
HOUSES AND RUNS	13—23
Houses — Hogshhead houses — Lean-to houses — Perches and nests—Moveable houses for fields—Confined runs—Covered runs—Open spaces used to the best advantage—The treatment of confined runs --Difficulties with regard to runs: how to surmount them—Fighting Cocks and how to keep them apart.	
TREATMENT OF BROODY HENS	25—27
Broody hens in the way—Some modes of curing—The only humane and effective plan for bringing the birds on to lay quickly—The broody coop.	
MOSS PEAT	29—31
Moss Peat a permanent benefit to fowls and owners —Lime and dust: danger and dirt—Moss Peat a deodoriser—German <i>versus</i> English Moss Peat.	

CONTENTS.

	PAGES.
WHICH ARE THE BEST FOWLS TO KEEP... ..	33—39
Strain, not breed, the index of excellence—Good crosses for profit—Sitting varieties and non-sitting varieties—where to keep one or the other for the best results.	
FEEDING... ..	41—54
Past mismanagement and its results—Soft Food and how to mix it—Meat for Fowls—Eggs without shells, and how to avoid them—Feeding with troughs—Stimulants for sluggish fowls—Grit, maize, and egg shells, hemp seed, and boiled grain—Fish diet and fishy eggs bring “fishy” financial results—Herbs and green food for fowls.	
HOW TO BREED, AND WHAT TO BREED FROM ...	55—76
Good birds kept shew truest economy—Fertile eggs, how to ensure—Artificial incubation—Incubators, their defects and disappointing results—Foster-mothers—Sitting and hatching.	
PURE OR DISTINCT VARIETIES	77—128
Plymouth Rocks—Minorcas—Leghorns—Black Leghorns—Buff Leghorns—Dorkings—Creve Cœurs—Hamburghs—Scotch Greys—Game—Indian Game—Houdans—Cochins—Wyandottes—Golden Wyandottes—Buff Wyandottes—Langshans—Brahmas—Redcaps—Andalusians—Orpingtons: Black, Rose, and Single Comb, and White—Buff, Single Comb and Rose Comb.	
BANTAMS	129—131
Bantams not useless—Juvenile interest awakened: results in after life—Favourite varieties—Mistakes and pleasures—Hints as to management.	

CONTENTS.

	PAGES.
CROSS-BRED FOWLS	134—158
Cross-bred fowls : what they really are—The utility and great value of the system and advantages accruing therefrom—Crossing and re-crossing—Houdan - Cochin — Houdan - Minorca — Houdan-Leghorn - Houdan-Indian Game - Minorca-Langshan - Leghorn - Plymouth Rock — Dorking-Brahma — Indian Game - Plymouth Rock — Indian Game-Dorking — Plymouth Rock - Brahma — Orpington-Dorkings — Hamburgh-Cochin — White Orpington-Light Brahma — Orpington - Brahma — Leghorn-Orpington.	
SURREY AND SUSSEX FOWLS	159—166
Surrey fowls : Their excellence and consequent leading position as market fowls—The Author in Surrey and Sussex—The Surrey system of feeding—Surrey fowls, past and present—Sharp grit for Surrey fowls—How Surrey people keep their chickens dry.	
POULTRY FARMING AND KEEPING	167—175
Questions often asked with regard to poultry farming — Ignorance—Failure—Distrust—Popular suspicions concerning poultry farming—The commencement : how to begin and how not to begin—Theory one thing and practice another in Poultry Farming.	
FATTENING FOWLS	177—181
Disappointment in young birds for table overcome by fattening—Fattening coops and food—Skim milk and fat for fattening fowls—Cramming by hand and by machine—Hints for helping fattening fowls—Killing.	

CONTENTS.

	PAGES.
PREPARING BIRDS FOR THE SHOW PEN... ..	183—187
Novices, careless and disappointed — Untrained birds: their beanties not perceptible, and consequently overlooked by judges—Washing the birds—The care of cockerels after returning from showing.	
DISEASES	189—231
Poultry subject to many diseases—Ignorance of many people respecting this fact and the result of same—"A stitch in time saves nine"—Warm comfortable houses the best preventive of disease—Roup—Liver disease—Leg weakness—Gapes—Cramp—Egg-eating—Egg-bound—Crop-bound—Soft eggs—Comb disease—Feather-eating—Consumption—Diarrhœa and Dysentery—Dropsy in the abdومن—Inflammation of the Lungs—Vermin—Bumble feet in fowls.	
TO PRESERVE EGGS	233—234
The quicklime system—Buttered eggs—Eggs preserved in sawdust.	

LIST OF ILLUSTRATIONS.

LIST OF ILLUSTRATIONS.

	PAGE
Broody coop	26
Black Minorca pullet	84
Brown Leghorn cock	88
Buff " hen	90
Black Hamburg cock	94
Black Orpington cock	112
" " hen	114
Black Rose-comb Orpington cock	116
" " hen	118
Buff "Orpington" cock " "	122
" " hen	122
Buff Rose-comb Orpington cock	126
" " hen	126
Bantams : White Rose-comb, cock and hen	130
Chicken coops	67
Coloured Dorking hen	92
Dark Brahma cock	106
Golden-Spangled Hamburg hen	94
Golden Wyandotte cock	102
" " hen	102
Hogshead houses	14
Heads of good and bad layers	56
Houdan hen	100
Indian Game cock	98
" " hen	98
Lean-to-houses	16
Portrait of Mr. Cook	Frontispiece
Plymouth Rock Hen	78
Partridge Cochin hen	100
Silver Grey Dorking cock	92
" Spangled Hamburg hen	94
" Wyandotte cock	104
" " hen	104
White Leghorn cock	88
" " pullet	88
" Orpington cock	120
" " hen	120



INDEX.

	PAGE
Author's experiences among poultry keepers	5
Ashes and dust for runs	21
Andalusians, their plumage and laying qualities ...	110
Author's experiences among Surrey Fatteners	159
Burying corn to give exercisé	20
Boarding up runs to prevent cocks fighting each other ...	22
Broody hens: how to deal with	25
Broody coops: how to make and use	26
Biscuit meal for fowls... ..	42
Boiled corn: when and how to give it	51
Birds for profit: how to breed	55
Broken eggs in nest: how to act in case of	63
Bone meal for young chickens... ..	72
Buff Leghorns	89
Brahmas: light and dark	107
Bantams: Black Rose-comb and White Rose-comb ...	129
Bantams for children... ..	129
Broken eggs in oviduct: how to relieve fowls in cases of	216
Bumble feet: how to avoid and cure	230
Children's training and amusement: poultry keeping in regard to... ..	2
Continental poultry supplies: advantages of home produc- tion	9
Crosses, good profitable: egg producers and table birds ...	36
Cabbage and green food: how to keep up supply of latter	53

INDEX.

	PAGE
Chickens at hatching time, how to deal with and take care of	65
Chicken-coops : how to make and use	67
Cramp : its causes, and results in case of	69, 207
Chickens reared under glass : their weakly condition ...	70
Chicken rearing summarised	74
Creve Cœurs : their good qualities	91
Cochins : Buff, White, Partridge, Black, and Cuckoo ...	99
Cross-bred fowls : their use and advantages	133
Cramming and Crammers	161
Camphor for fowls	206
Colds : how to prevent	192
Crop bound : how to relieve the fowl	212
Comb disease : its causes and cure	218
Consumption : its causes and remedy	223
Dandelions for poultry	53
Dorkings : coloured, silver-grey, cuckoo and white ...	91
Dorking-Brahma cross	147
Diseases : how to deal with in early stages	190
Diarrhœa and Dysentery : how to act in cases of	223
Dropsy in abdomen : how to relieve	226
Evils of misleading poultry literature, and baneful effects of its influence	6
Exercise for sitting hens : care of nest during same ...	64
Egg-eating : how to prevent	209
Egg-bound : how to act in case of fowl being	211
Fowl-houses—cheap and inexpensive : how to make, fit, and place them	13
„ Hogshead : how to adapt	14
„ Lean-to : with plan for preventing ingress of rats	16
„ Moveable on wheels : their uses and management	19

INDEX

	PAGE
Feeding : erroneous opinions with regard to	41
„ why this should be carefully attended to	42
„ when and how to give the food	43
Flint grit for poultry	48
Fish for poultry : which birds should have it, and which should not	52
Fertile eggs : how to ensure	57
Fresh blood : its absolute importance	57
Foster mothers	60
Fatteners' diet	161
Fattened poultry : prices of	172
Fattening fowls : how to feed and tend	178
Feather eaters : how to deal with and cure	221
Grain for poultry : the best kinds of	50
Groats for young chickens	71
Gardens : how to utilize for rearing young chickens	73
Game : varieties and leading points	97
Golden Wyandottes : their advantages and points	103
Gapes	205
Hatching hens : how to feed and tend them	66
Hamburgs : silver-pencilled, golden-pencilled, silver-spangled, golden-spangled, and black	93
Houdans : their points and peculiarities	101
Hamburgh-Cochin cross	155
Houdan-Cochin cross	137
Houdan-Minorca cross	138
Houdan-Leghorn cross	140
Houdan-Indian Game cross	142
Heated houses : dangers attending use of	190
Indian Game : their value for crossing and table purposes	98
Incubators : failures and successes	57
Indian Game-Plymouth Rock cross	148
Indian-Game Dorking	150

INDEX.

	PAGE
Inflammation of lungs : how to deal with	227
Killing	180
Liver disease : direful results of ; symptoms, causes and cure	49, 199
Lime : its uses and its dangers	74
Leghorns : black, buff, pile, and duckwing	87
Langshans	105
Leghorn-Plymouth Rock cross...	145
Leghorn-Orpington cross	158
Leg-weakness	204
Moss peat for poultry..	29
„ substitutes for	31
Meat for poultry	43
Maize for fowls : its use and abuse	49
Moisture for eggs during period of incubation	63
Management of small broods : economical amalgamation of same	65
Minorcas	83
Minorca-Langshan cross	143
Nests : how to make and place them	61
Newly hatched chickens : how to feed and care for	66
No-water system : author's experiences of same...	75
Orpingtons : their origination	10
Oyster shells for laying hens	44
Orpingtons : single-combed black, rose-combed black, white, and Rose-comb Buff, and Single-comb Buff, their spread, popularity, and advantages	111
Orpingtons—Buff: origin and good points	121
„ „ standard of	125
Orpingtons for crossing	114
Orpington-Dorking cross	152
Orpington-Brahma cross	156

INDEX.

	PAGE
Poultry keeping as an industry : past abuses, present encouragement	1
Poor man's pleasures : poultry keeping in regard to ...	2
Poultry keeping <i>will</i> pay	7
Poultry keeping past and present : restrained, encouraged	8
Perches for runs : their great usefulness	21
Proportions of nutriment in various grains : table of ...	45
Plymouth Rocks : their advantages and peculiarities ...	78
Plymouth Rock-Brahma cross	151
Poultry farming : does it pay ?	167
Practical poultry keeping <i>versus</i> ignorance	168
Poultrymen : qualifications of	171
Poultry-keeping : profits of	174
Preserved eggs : various systems for keeping ...	233
Runs for poultry	20
Runs : covered	20
Runs : how best to arrange	21
Redcaps or "mooney" fowls	108
Roup : how to deal with	191
Strain : its importance in regard to selection of birds ...	33
Soft food : and how to mix it	42
Scraps : how to utilize to the best advantage	43
Sharp grit for poultry in confinement : the absolute necessity of	48
Shingle <i>versus</i> grit	48
Shell-less eggs : how to avoid	44
Sulphur for poultry : its value, and risks attending its use	51
Stinging nettles for fowls	52
Sitting hens	60
Sitting hen : when and how to put on nest	62
Setting : how to manage same, and how many eggs to give the hen	62
Scotch Greys : their popularity and characteristics ..	95

INDEX.

	PAGE
Surrey fowls : their production and prestige	159
Surrey fowls : how tended when young... ..	162
Show pen : how to prepare birds for	183
Scrofulous matter : how to remove from throat	193
Soft eggs : how to avoid	215
Soft egg in passage : how to remove	216
Tropical climates : non-sitting varieties for	38
Troughs for feeding poultry	46
Testing eggs at eighth day : how to detect unfertile ones	64
Unfertile eggs : how to use to best advantage	65
Ventilation in fowl-houses : how best to secure	18
Vegetables and green food for poultry	43
Vermin : evidences of their presence and how to destroy	228
Warm water for fowls : beneficial effects of	43
Watercress for fowls	53
Wyandottes : their points and failings... ..	102
White Orpington-Light Brahma cross	156
Washing for show pen... ..	183
Young chickens and vermin	69



PREFACE.

M^Y original intention in writing the first edition of this book was to show the people of England that climate and soil were not really the causes of the great success the French met with in poultry-keeping, but that the real secret of their success lay in the practical knowledge the people generally possessed concerning the methods which were most likely to lead to the greatest number of eggs and the largest and finest table birds being produced, and the energy of those who take up this most valuable and profitable pursuit to help their small incomes and to give them luxuries that apart from the profit so gained would have been well-nigh impossible.

In sending forth the seventh fully-revised edition, I thanked all those who had not only read the book, but who had brought into practical use the many hints it contained, and who also had not been slow to confess honestly that the birds who for so long had been maligned and deemed unprofitable servants to mankind, were not so much to blame as those who by wrong treatment, carelessness, and indifference to the welfare of their birds, of course, rendered their lives miserable, and the good results that should have been gained as impossible as anything this course produces in things men have to do with.

Looking back to that time and scanning the circumstances of the intermediate months, the same gratitude in an increased degree naturally fills one's mind. The eighth edition is all but sold out, and the books are now circulated in all parts of the world, and I can only hope the good work of instructing my fellow men in practical and profitable poultry keeping will go on apace, so that the interest now so manifestly awakened in all parts and shewn in the repeated applications by the County Councils for my lectures will be fed and increased, while sound information shall, as the result of these chapters, strengthen its influence and add to its practical and utilitarian importance.

In all parts of the world the Book has found admirers and grateful readers, and some who were sceptical have been forced by sheer facts to acknowledge that those birds I at first likened to machines for converting waste and worthless matter into good and profitable delicacies are really what they were represented, and that the "Poultry Breeder and Feeder" has indeed fulfilled its mission in a marked degree in showing people "How to make Poultry Pay." Looking back now over the years which have passed since I first sent this Book forth to the public, in spite of many difficulties, I remember how it had been tossed about on the sea of controversy and conflicting opinions, the only result being that it has become better known and more widely appreciated, and its contents, like all truth, have stood the test. Poultry-keeping is one of England's best hopes for the future, calculated as it is to help in increasing the pleasure and profit alike of both rich and poor, combining intellectual amusement and profitable recreation for all

those who care to trouble enough about their birds to treat them as they should. The development of the industry in England would form an interesting study, and statesmen and others are beginning to wake up to the fact of its importance, while our go-a-head cousins over the water who have, if anything, made better use of the "Poultry Breeder and Feeder" than the English, are beginning to send over their eggs and poultry, as they have sent their cattle, to the shores where so many find a market for their produce. During my journeys up and down the country I see interesting signs of progress everywhere, and the fact that I am this year, more than ever before, lecturing day after day in town and country districts for the County Council, shows that poultry-keeping is more rapidly than ever assuming its proper position in our midst.

Trusting that intelligent poultry-keepers have found in the additional matter something more of help and encouragement, I send forth the ninth edition, as I have sent the former ones, with the good intention I originally had, seeing no reason to alter the name or title in any way, feeling assured—as I have more reason to do every day—that the system it advocates and lays down is indeed that which will help people to make poultry pay. Over 30,000 are now in circulation. This fact speaks for itself.

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ORPINGTON HOUSE,
ST. MARY CRAY, KENT.

November, 1895.



GENERAL REMARKS.

Poultry-keeping—Moral, sanitary, and financial benefits, combined with improved health—Personal attention for good results—Comparative advantages of town and country poultry-keepers—Poultry will pay—Poultry-keeping past and present—The author's work.



POULTRY-KEEPING is still rapidly on the increase, and as a consequence we constantly hear of new breeds, new appliances, new methods, and indeed almost everything seems new, as the development of this important industry awakens in the minds of many ingenuity and powers which have lain dormant, and we feel more and more assured of the future good results which must be gained by spreading broadcast throughout our land those feathered pets which are—because they yield a handsome profit—essentially the poor man's pets, who cannot afford, as the rich do, to indulge in keeping large animals or a number of birds that are all expense and yield no return. Poultry-keeping as an industry offers many advantages

which must appeal significantly to all those who study the influences at work in the elevation of the poor of countries or districts. Unlike many hobbies it has an elevating effect upon those who are enthusiasts in carrying forward its interests. For children the good results that come from an early acquaintance with poultry-keeping are an important consideration. Young minds are active if they are healthy, and young hands are the willing servants of these minds, and if this activity can only be diverted and trained and turned from mischief into useful efforts to excel in amusements which are instructive, a great deal is gained in directing aright those influences which make or mar young lives. Kindness to animals, regularity in attending to the wants of the birds, a certain business enthusiasm, which in these days of keen competition men who are to succeed must have, in addition to much practical knowledge, such as that gained in carpentering, to build the houses and runs, painting, whitewashing, and in many other ways, all of which help to train young minds to regular and industrious habits at the time when they are most easily influenced, keeping them at home and preventing them spending their spare time at the street corners, in the public houses, or in other doubtful places of amusement.

Then the questions of economy, and even sanitary benefits may be cited as by no means unimportant considerations, and in these particulars poultry-keeping may be said to achieve one of its greatest successes. There is always a great quantity of waste food, scraps, kitchen refuse, &c., which if not disposed of somehow finds its way into the ash bins—causing unpleasant smells, dangerous to

health, and detrimental to comfort. Poultry would thrive on much of this refuse, and mixed with a little meal and hard corn, these scraps, &c., might be used as food for the birds, who in return for it would give fresh eggs and at last make a beautiful dish for the table. It might be useful to hint here that in towns it would be a good plan if poultry-keepers could collect refuse from hotels, &c., as they could get a good part of their fowls' food in this way and the birds would thrive better and produce more eggs on such food as this than any other ; certainly this is better for them than any patent foods.

Thus it will be seen how valuable poultry are, and when in addition to this it is remembered that millions of English money finds its way into other countries because English poultry and eggs are not produced, how important does it appear that the English cottagers and others should avail themselves of the splendid opportunity that lies within their grasp. Poultry-keeping recommends itself as an industry for the poor because the birds being so small the risk of losing stock by death or accident is not so great, and losses are not so far-reaching in their results as in many forms of live stock farming. For instance where pigs, sheep, cows, or horses are kept, the loss of one of these animals forms a serious item, but the loss of even one or two fowls can speedily be got over, and so a poor man need not hesitate to embark upon this enterprise through fear of great losses. On the other hand the author has found from experience that having kept all kinds of cattle and live stock, none have yielded so good a return as poultry, so that the best investment for both rich and poor is poultry-keeping, and

the fact of his having some hundreds of acres devoted to this pursuit shows that he does not speak without experience.

Then to keep a few fowls, only a very small space is needed, and almost every cottager has enough room to spare for this, while for larger animals his back garden would be useless, and why should it be that English cottagers have to be content with French eggs, which are oftentimes uneatable, while they may, if they choose, produce fresh eggs and enjoy the luxury of a roast fowl sometimes for dinner? In times of sickness, eggs are simply invaluable, and as this frequently comes when eggs are dearest, the persons sick, if they are poor, often cannot afford to buy them at all, and have to go without, when, if a few fowls had been kept, they might have been forthcoming. The pleasure to be gained by people of all classes, mixed oftentimes with immense benefit to their health and prospects, renders poultry-keeping an important factor in the joy of every-day life. The author has known many instances where cottagers with a small piece of ground have paid their rent and derived a great deal of pleasure by keeping poultry, while some very delicate ladies he has known have greatly improved their health by getting out into the air to attend to their birds. Poultry-keeping is a pursuit the love for which increases as a person goes on. At first it seems a little irksome to some, but the author has known many who have persevered, and success has brought enthusiasm and increased their interest until they have found in their birds one of their chief delights, independent of the profit gained. How eagerly the children expect the little chicks when a hen is sitting; how carefully is she lifted off her nest

morning after morning, and then how great the delight when the little balls of fluff appear and become the pride of their young owners. And how good it is thus to interest children ; nothing gives parents such delight as seeing their children pleased and interested with animals, or, indeed, any good thing. The love for animals will often check a brutal tendency in children and make them kind to these pets, when otherwise the bad influences of a brutal nature might have been left to lead them into excesses which often end seriously.

Poultry always pay for good and personal attention. The author travels about 30,000 miles a year up and down England, visiting the poultry yards of both rich and poor, driving from farm to farm and district to district, and seeing in the course of these journeys all sorts of poultry, all sorts of poultry keepers, and all sorts of poultry accommodation. When he is requested to pay a gentleman a professional visit, as he often is, he frequently calls on many others in the same district, and so when he says poultry-keeping pays for personal attention, he speaks from a vast experience of localities and breeds best suited to districts, as well as the conditions under which it is most suitable for poultry to be kept. He is often called in to lay out pens and yards, and in some cases where poultry-keeping has been unsuccessful he is able to detect the flaws in the system, remedy the evils, and start the person on the road to successful and lucrative experiences. He finds, among the people he calls upon, cottagers who make a handsome profit out of their fowls, and who give them personal attention and carefully provide for all their needs. On the

other hand he finds oftentimes rich men whose poultry kept and tended by others scarcely pay at all, so that working men will see that the opportunities are really very much on their side in this matter. There are books which oftentimes lead cottagers astray by saying so many fowls only should be kept on so much ground, and speak of expensive appliances, heated houses, &c., and lay down rules of a most extravagant kind; but cottagers should not be alarmed by these, but go on treating their fowls intelligently, giving them a good warm food and hard corn diet, as advised in the pages of this book, and they will help their fowls to lead the most useful of lives and give their owners much pleasure and not a little profit.

Poultry-keepers are apt, like all other people, to form comparisons. It is suggested by many persons residing in towns that country poultry-keepers have so many more advantages for successful poultry-keeping, as their birds can roam over commons and fields, and oftentimes pick up half their living. This may be so in some cases, but when we consider that in the country the pig-pail and other sources absorb a good deal of the scrap refuse, all of which goes to the fowls in towns; how much less a country producer gets for his eggs—often not more than half as much—the limited sphere he has to get customers, and then the disadvantages of selling oftentimes through a market, it will be seen that the town producer, even if it costs him a little more for the keep of his birds, most certainly has the best of it over and above the opportunities of getting scraps, &c., from the hotels, of which I have spoken. Eggs always realise a better price in towns or good districts near a town, and to

have the birds on the spot is an immense advantage, and if all things are fairly considered the town poultry-keeper will find that he has by far the greatest advantages. Six fowls penned in a back-yard in a town often lay more eggs than ten in the country, where they have several acres to roam over during the winter months, as where they have grit and corn, &c., supplied, they are fed regularly, while the chances are they do not pick up while running over the ground as much as is supposed.

One of the facts an increased interest in poultry-keeping has evolved is that poultry *will* pay. In a few instances the author has known poultry to clear from 15/- to £1 per bird where only a few have been kept, say 6 or 13 hens; and where 25 or 46 have been running, they have brought in from £9 to £20 clear profit. Of course this is where the birds have been treated properly, and the eggs, &c. have sold well in a good town or district. This profit is welcome to all, in whatever position they are placed, and it adds pleasure to pleasure when a hobby is a source of income. It was one of the habits of the late Prince Consort to make all his experiments in farming, &c., pay, and if this were the only good lesson this excellent man left behind him he would have done good work. But to the poor, how much more welcome is a little additional money to their limited incomes, and if to the joy of their children over the chickens and the nutritious eggs and savory fowls, they are able to remember a little profit made, surely they will feel grateful for the feathered pets that have done so much to make their lives happier.

Poultry-keeping is to day a very different thing from

the poultry-keeping of years gone by. In those days of conservative old breeders, who would neither impart anything they possessed in the way of knowledge, or sell eggs or birds, and who guarded most jealously any approach to the spread of the industry, poultry-keeping for the poor man was practically out of the question. The best he could hope for was to get a few mongrels from some farmer or other enterprising person, who could supply them, and these were the birds which led so many disappointed cottagers and others to say "poultry will not pay." How altered are the circumstances of poultry-keepers now. In these days of shows and periodicals devoted to the fancy, of improved appliances and methods, when the poorest reads the experiences of the rich, and on the poultry-keeping platform the rich and poor meet together; when master vies with man to produce birds of excellent quality, and the man often beats; in these days of fair prospects, it is not surprising when we find that where one person kept poultry ten years ago twenty keep them now, and that all over the country men and women are going in more and more for good birds and good results. The author entertains the hope that in the course of some twenty or thirty years the English people will be found producing poultry and eggs sufficient to supply all the needs of England, and consequently in a much better position than now.

A great many good eggs are sent out from England now to Africa, America, India, France, Belgium, Holland, and Germany, and a good number to Australia and New Zealand, and these are sold at from 4/- to a guinea per doz., so of course good birds are produced from them.

The English breeders not only keep good birds, but are continually improving them, and these are becoming more plentiful all over the country, but the only grave defect is found in the fact that exhibitors at our shows are apt to sacrifice the laying qualities to fine feathers and good points ; thus oftentimes a good breed is spoiled because, in the eagerness to produce fine plumage, &c., the more important qualities from a commercial point of view are lost sight of. The author has been working for years to counteract this evil, and produce birds that combine exhibition points with good laying qualities. The laying qualities are all important in our English fowls because eggs are such an article of consumption in this country. The cottagers and small farmers in France, Sweden, and Denmark, produce most of the foreign eggs sent to this country. These people make poultry pay well enough. The eggs have to pass through the hands of four or five middle-men, each of these making a profit for himself ; how much more then should the English poultry keeper be able to realise a good price for his eggs and get a good living. These people have pretty much the same climate as our own, and indeed in Ireland, whence we get many of our eggs also, the climate is even damper. The foreign eggs are generally smaller than those produced at home, so the home producer has many advantages over his foreign competitor for the poultry and egg trade of England.

Amid all the changes that have been wrought in the poultry-keeping world, the author has been a foremost figure. He has travelled all over the country and has been continually in touch with poultry-keepers of all classes ;

then at his London office he has met boys and girls and men and women who have brought him their pets to relieve of their pain or give them advice concerning them, some coming from 20 miles round. In addition to this he has continually answered letters which have been sent him from all parts of the world, with stamped addressed envelope enclosed for advice, which he gives gratis, he having sometimes as many as from 100 to 160 letters in a day. Thus he has striven to disseminate good sound advice, shewing that as corn was tolerably cheap and conditions favourable, how people might make their poultry pay. The Orpington fowls (so named after the village in which he lived at the time of their introduction) form one of the results of his experiments in producing a good table bird with excellent laying qualities combined, with a good and handsome appearance. These have spread all over the world, and have taken a prominent position as one of the leading varieties of fowls. Of late years he has also made public what he for some time kept a secret, viz., how he detected the good layers among a flock of birds. He gives in the book some heads of fowls, which he has had engraved from photographs taken by Mr. E. Davey Lavender, Gold Medallist, of Bromley, Kent, of live specimens of the good and bad layers of various breeds. The success of this branch of intelligent poultry management has been marked, and he has received letters telling him where, even children—some as young as ten years old—have taken his book and gone to the run and picked out the best layers quite easily. Poultry-keepers generally have also accepted this, which is proved so conclusively to be the practical outcome of intelligent observation.

Utility has been the watchword of the author, and his success in producing good profitable birds has been great, as the new breeds he has introduced to the poultry world will shew, and now he has only the desire that the truth concerning poultry-keeping may be told, believed, and proved by the many thousands of those whose lot is made up largely of want and worry, bringing them better days and brighter prospects. The illustrations in this book are drawn from life and engraved, the best birds in the author's yards being used as subjects for them.



HOUSES AND RUNS.

Houses—Hogshead houses—Lean-to houses—Perches and nests—
Moveable houses for fields—Confined runs—Covered runs—Open
spaces used to the best advantage—The treatment of confined
runs—Difficulties with regard to runs, how to surmount them—
Fighting Cocks and how to keep them apart.

HOUSES.

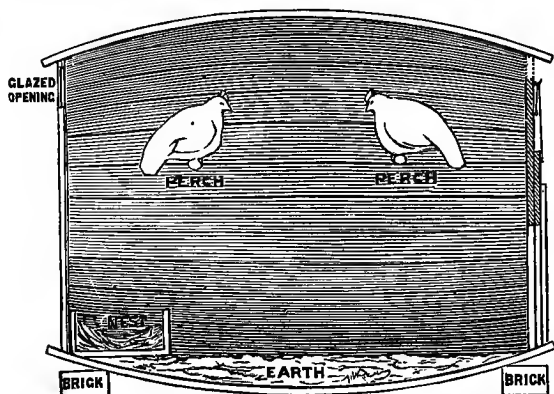
THE house is a great consideration for poor people, as they do not consider they can afford £2 or £3 for this purpose, and therefore they do not keep fowls on account of the cost. There is, however, no need to go to this expense when starting poultry-keeping, although it is money well spent where it can be spared, and the fowls will soon pay for the trouble and care expended on them.

Where only a few fowls are kept, say half-a-dozen, they may be easily housed in a large box or hogshead bought from the grocer's for a few shillings, as very comfortable houses may be made out of these articles when treated as hereafter described.

If a hogshead is used, it should be laid on the ground on its side, and fastened so that it cannot roll. A few inches of earth or road-scrapings should be put in the bottom and beaten down to make a level floor. A small square should

be cut out of the farther end, close up to the top, and a piece of glass about six by eight inches put in, so arranged that it may be opened wide when the weather is not too cold. Ventilation must also be provided by boring a few holes in the front and back of the hogshead; these holes should be made as close to the roof as possible so that the fowls will not feel a draught.

Two perches should be put across the barrel, at about a height of 6 or 8 inches from the bottom as it lies upon its side, so as to give the utmost space for ventilation over the birds' heads, and so made that they may be moved easily; and a nest must, of course, be provided, and so arranged that it may be got at easily, the best position for this



HOGSHEAD HOUSE.

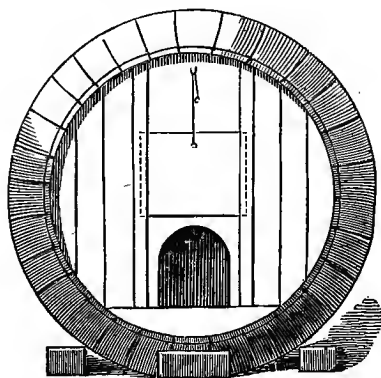
purpose being at the end, just under the moveable window.

The front should be boarded a little at each side, the door being in the middle, and a hole should be cut in

the bottom of the door to allow the fowls to pass in and out. A slide should be made to fit the hole, but where there are no foxes or other vermin that might get in and molest the fowls it is better always to leave the slide open summer and winter.

The top of the hogshead must be covered with a piece of felt or canvas, and well tarred to keep the wet out, and if the cracks are very wide, some brown paper should be pasted over them inside, and this may be torn away in the warm weather. It is well to give the paper a good coating of limewash, to keep insects from sheltering underneath it. A large box may be used in the same way as the hogshead, but the roof must be made slanting, or the box should be tilted up, to allow the water to run off.

If a large box or hogshead cannot be obtained, a few egg-boxes may be bought cheap, and a small house built out of them, if possible against a fence or in a corner.

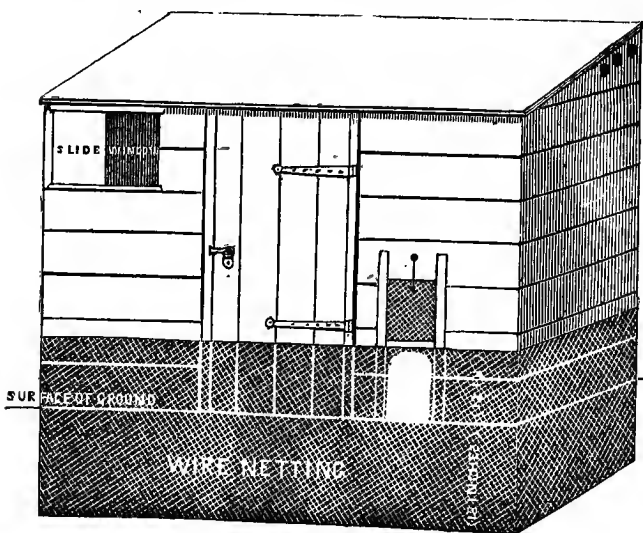


FRONT OF HOGSHEAD HOUSE.

The wood is rather thin, but if covered with brown paper, as in the hogshead, they will do very well, and a nice warm house may be made out of them.

For eight to twelve fowls, a house five feet high and five feet square will be quite sufficient, and I may mention that I have kept fowls in perfect health and full lay all through the winter in these little houses.

If a larger or more substantial house is required, it may be made with feather-edged boards for the sides, &c., and the roof may be either thatched or made with ordinary half-inch boards, covered with German felt, which is far superior to the ordinary felt, as it only requires tarring once



LEAN-TO HOUSE.

Showing Wire Netting above and below ground for keeping out Rats, &c.

in three years, and does not harbour vermin like the ordinary felt, and the germs of diseases are often harboured by the old felt, but the German kind does away with all that. The feather-edge boards are not so good for the roof, as they do not keep the wet out without being covered with felt, and when felt has to be used, it is better to put it on even boards, as the edges of the feather-edged boards cut the felt through. The boards for the roof should be both well seasoned and perfectly dry when put on, if not, they might shrink and tear away the felt so that water might get through. $1\frac{1}{2}$ in. by 2 in. quartering is quite strong enough for the frame work, and for a small house even less than this would do. The sides must be tarred or painted to preserve the wood.

The houses may be either arranged so that they can be carried from place to place, or they can be made to lean against a wall. In any position, the bottom should be covered with moss peat litter, which is by far the best thing for this purpose.

It will be seen from the diagram that wire netting is put all round the outside of the house, going down 18 inches below the surface of the ground, and 12 inches above. This is done to prevent rats either burrowing under the sides of the house, or gnawing through the boards; all houses can be made rat-proof in this way.

The perches should be made to fit in a socket, and must be placed out of the draught. Heavy birds should never roost more than from 15 to 18 inches from the floor, and lighter birds never more than from 18 inches to 2 feet. The perches should be made quite flat, about two inches

wide, the edges being bevelled off, this prevents the chickens having crooked breasts to a large degree. The perches should be 15 inches apart ; if nearer the birds peck each other.

The nests should be placed so that the front faces the darkest part of the house. Some persons reverse matters. Hens take more readily to a nest if it is shaded from the light.

Ventilation must *always* be provided in all poultry houses by an opening of some sort at the topmost point of each end of the building. The ventilators must be so made that the draught passes above the birds' heads, carrying with it the vapours and ammonia from excrements and fowls' breath. When the perches are low enough, the foul air rises to the top, and the fowls escape it, but it will be seen that when the perches are placed in high positions in the house it is impossible to give proper ventilation without a constant draught coming upon the birds. An opening must be made for the birds to pass in and out, and this should be fitted with a slide made so as to be covered with wire netting or some strong material which would admit a current of air. Every fowl house should have a window, and these should be made so that they may be opened or shut according to the state of the weather, as fowls like light.

In building houses it is well to use screws as much as possible, so that they may be easily taken to pieces ; and if the sides can be made to fit on in one piece it is all the better, as it is more convenient for moving, and, if required, they may be fixed on with a hinge, so that in wet weather

additional shelter may be provided by propping up the side that gives most protection. There are also many houses made complete by well-known manufacturers that can be obtained at a moderate price, if desired, as advertised in this book.

People who live in the country will generally have a shed or outhouse that may be used for the poultry ; but those in towns will probably have to build their own houses, and if the instructions here given are followed, they will have no difficulty in providing suitable accommodation for their birds at a moderate price. Where two or three small pens are kept for breeding purposes, it is well to make one long house, and divide it inside, leaving a small passage for the attendant to reach each partition.

Small houses may be made with wooden bottoms and fixed on wheels, and these are very useful, especially to farmers, as they can move their poultry from place to place, and in the autumn the young chickens may be turned out on the stubble in these houses, where in most cases they do remarkably well, as it is entirely fresh ground, and here they will pick up their living for two months or more without any other feeding, eating not only all the waste grain left after harvesting, but also many injurious insects, grubs, slugs, wireworms, and many other insects that are most deadly enemies to the crops. Not only that, young chickens should be put out in the grass fields in houses away from the farmyard, where, during the summer, they would get one half of their living, grow much faster, and do the grass good. Hop farmers, particularly, should coop hens and chickens all over the hop fields. The hens should be made

fast in coops, and the little chickens allowed to roam about, so as to cover the entire ground, as there is a tremendous lot of insect life bred upon the bine, which falls upon the ground, and if nothing interferes with them they get back upon the bine again. These insects the young chickens thrive upon, viz., greenfly, spiders, grubs, and in young hop gardens, the wire worm at the roots of the hops. When the chickens grow a good size they scratch round the roots and get the wire worms out, seldom doing any damage to the roots themselves.

RUNS.

Although poultry may be easily kept, and will thrive well in small runs if kept clean, the more room they have the better for them ; but as many poultry-keepers are cramped for space, I describe the best way to keep them in close confinement.

From six to eight fowls may be kept in a run, four to seven feet wide by five to seven yards long, but in all cases where birds have small runs they should have a part of it covered in. If a part of the run can be covered in, so that it does not cause a draught, it is much better for the fowls, to provide shade in summer and to keep the wet off in the winter ; and it is also well to provide shelter from the cold winds. This may be done by boarding up part of the side of the run, or by thatching hurdles with straw, and placing them against the wire outside the runs.

Then, under the covered-in part, place dry earth or a little loose straw, scattering a few grains of corn under it. This also gives them employment, and circulates their blood. If fowls have their corn buried and have to scratch for it,

although they may be kept in small confined runs, the exercise is better than that obtained by running about a field, and consequently they will lay more eggs during the winter months. This is frequently the case where people keep fowls in small confined runs in town.

It is well to put a perch in the covered run (length according to the number of birds), as they are very fond of sitting on a perch to clean their plumage. This often prevents them from plucking their feathers, as they do not then stand about in groups. Where it is not convenient to have a covered-in run, place a perch in the open run.

Where two or three pens of birds are kept, the best way is to keep each lot in an enclosed run, and allow them out separately every day for two or three hours on a larger piece of ground. Each pen will then have the advantage of a good run every day, and after a week or so there will be no trouble in driving them in and out, as they will be quite used to it and know their way.

To give an example, I may say that should one have an acre of ground, and want to utilise it to the best advantage for poultry, divide it across the centre, and place the houses and runs in the warmest part, and have a slide to each pen into the square half-acre, which should be grass, so that each pen of fowls has the advantage of a good run every day. The runs must be made according to the number of birds required to be kept in them, from seven to thirty, but if for breeding purposes not more than fifteen. Confined runs where there is no grass ought to be swept well in hot and dry weather, and in wet weather the top should be taken off. Grass runs should be well swept with

a hard broom, and rolled two or three times a year after a heavy rain, which makes them firmer and stronger, and prevents the hens scratching the grass up by the roots.

This is the best way of keeping poultry when pure, or in pens for breeding, and it is also the most economical as regards the ground, for to provide a perpetual grass run for each of these pens by other means would require about three times the quantity of ground. Fowls for general purposes may also be treated in the same manner.

Brahmas and Cochins may be kept in a run with the wire about three or four feet high, but for the other breeds it should be from five to six feet high, and often this is not high enough for some, in which case some wire netting must be put on the top of the fence or wall, so that it slants inward over the run, and thus checks the birds and knocks them back when they fly against it. If this is not sufficient, the run should be covered right in, or the feathers of one wing must be cut. One is quite sufficient. The flight feathers should be cut just underneath the first row of small feathers, leaving about two of the long feathers at the end. When done in this way the appearance of the bird is not spoiled.

The more comfortable the run can be made the better the fowls will like it, and the increased expense will be compensated for by the extra number of eggs obtained in the winter.

Where a covered run is provided, plenty of ashes or dust must be kept in a dry spot for the fowls to dust themselves in, and these should be put in the sun if possible. It is also well, where it can be managed, to have one part

of the run higher than the other, to allow the water to drain off.

Where two or three pens of birds are kept in runs joining one another, the first three feet of the side where the pens join should be boarded up two or three feet, or else very small mesh netting must be used, as otherwise the cocks will be sure to fight and damage themselves through the wire netting.



THE TREATMENT OF BROODY HENS.

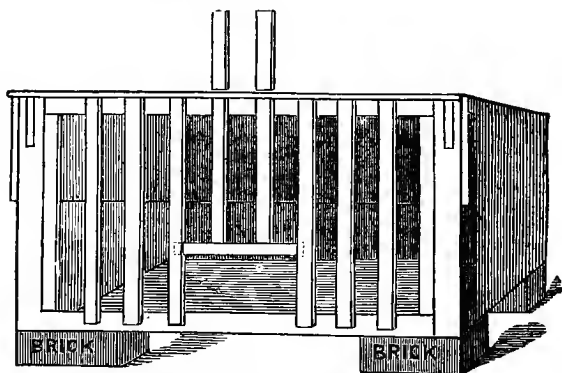
Broody hens in the way—Some modes of curing—The only humane and effective plan for bringing the birds on to lay quickly—The broody coop.

MANY breeds of birds come broody and give the owners a great deal of trouble when the warm Spring weather sets in, as, when eggs only are required, sitting hens are in the way, the owner having no use for them.

There are various systems recommended for curing them. One is to dip the hen in water ; another is to put her under a basket or tub, and keep her in the dark, without food or water for three days. The former is of little use, and the latter a great deal worse, as where a fowl is kept without food for three or four days it takes seven to ten days to get her back into the same condition as when she became broody, thus losing from six to ten eggs each time she is treated in this way. Some people think when a fowl wants to sit she has done laying. This is wrong. It is because it is her nature to do so, and if she can be put off from sitting, and fed well, eggs begin to grow at once,

and in many cases I have known they have not stopped laying for more than two or three days, and in other instances not at all. If a hen is treated properly and fed well it is seldom she goes longer than from seven to ten days before she is in full lay again, unless it is very cold weather.

The following treatment has been found by many thousands of poultry-keepers during the last twelve years to be an easy and effectual cure, and at the same time inexpensive. Many people have a coop made specially, but the ordinary box coop I give an illustration of answers the purpose, and is the least expensive of any I know of, which is made as follows :

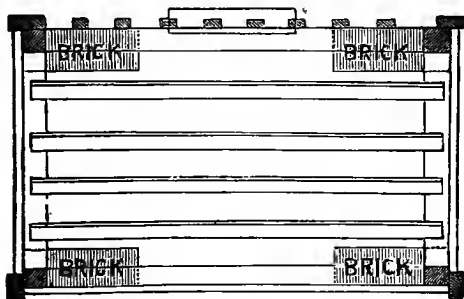


COOP FOR BROODY HENS.

Procure a box about three feet wide and 20 inches deep, in which three to six fowls may be kept at one time, and place bars across the front about two inches apart, so that the sitting hens cannot get out. The box must have no bottom, but bars from two to three inches apart should

be nailed across length-ways, and when the box is stood, say upon four bricks, it will be from two to three inches off the ground. It will therefore be quite impossible for the hens to sit down in it except on the bars—which should be round ; round bars keep cleaner because the excrements drop between them and they have not so much surface for dirt or excrement to collect upon—and this practically causes them to be on the perch day and night. An ordinary coop with bars across the bottom will answer the purpose.

The box or coop should be put in as light a place as possible in the run with the other fowls, and the water for the whole yard should be placed in front, so that the others must come in sight of the sitting hens to drink. They



BOTTOM OF COOP.

should also be fed all round the box, taking care that the sitting hens get as much as they can eat, as when fed with other fowls they generally eat more ravenously. By these means a broody hen can soon be cured, remain in a healthy condition, and quickly come on to lay again.



MOSS PEAT.

Moss Peat a permanent benefit to fowls and owners—Lime and dust : danger and dirt—Moss Peat a deodoriser—German *versus* English Moss Peat.

THERE are many people who see after their own birds, such as business gentlemen and clerks. In many cases ladies too take an interest in their fowls and do not mind doing all the work themselves, except when it comes to cleaning the houses out—that is a different matter altogether. Houses are usually whitewashed, and in towns, or on the outskirts of towns, they are generally rather low pitched that they may not be visible from the windows of the dwelling houses. This, of course, makes it rather more trouble to sweep and clean the poultry houses out. To save doing this so often many people use dry earth, cinder ashes, and in some cases lime, to put on the bottom of the houses. I may say here the latter is rather dangerous unless mixed with dry earth or peat moss, as when the fowls flap their wings, the lime is disturbed and often gets in their eyes. This causes the birds to scratch their eyes, which only irritates them, and makes things worse, especially if their feet are a little damp, and they go into the fowl house

on dry lime, which, naturally, adheres to the feet and toe nails, and more lime is put into the eyes. I have known them to almost scratch their eyes out on account of the irritation being so great, but to say the least, it makes the eyes very tender, especially in crested birds. No matter what is used in the houses in the way of lime or ashes, there is always a faint smell from the excrement.

Moss peat, however, does away with all this, if it is put from three to four inches thick on the ground of the fowl house and turned over occasionally. Where moss peat is used, a house only requires cleaning out at the very most four times a year, and there will not be a particle of smell in any way. The moss peat is a deodoriser. In all cases where this is used there should be a floor of some kind in the house, so that the damp from the ground does not get to the peat and make it clammy. It should always be kept dry, and on a cold morning during the autumn and winter, grain of some kind should be thrown in the moss so as to give them something to do in scratching after it. When a person has a dozen fowls, there will be from four to seven dust themselves in the peat. This is one of the greatest boons that was ever introduced for poultry houses, as it not only saves a great deal of trouble in cleaning the houses out, but keeps the birds nice and sweet. If any egg is dropped from the roost it is scarcely ever broken, and when the fowls come in from the wet or damp ground it is nice and dry for their feet. The fowls are so fond of it they will often scratch a hole in it and lay their eggs instead of going into the nests. Not only is it beneficial to the birds in this way, but it holds all the smell from the excrements, and the

manure is also very valuable when it comes out of the houses as it retains a great part of the ammonia from the excrements. Some of my readers may say, "How can the moss peat be clean and sweet, when the excrements from the fowls are not taken from it?" I can only assure them that what I say is quite true and the houses are kept quite clean and nice, as long as the moss peat is in them. There are a number of my houses I do not clean out more than twice a year, and never more than three times.

Thousands of visitors who call to see my poultry farm at St. Mary Cray are astonished to see how nice and dry the houses and birds are, and those who use moss peat always speak in the highest terms of its value.

As a rule, I use the German moss peat, the English being not quite so light and loose, but those who are living near where the latter can be procured should buy it, as it will come cheaper, though it may not last quite so long in the fowl house.

Those farmers who do not like to go in for the expense of buying moss peat, I should recommend to use the short horse manure in the bottom of the poultry houses, say a fresh barrow load or two every week, and occasionally stir it up, particularly during the winter. This gives the birds employment in scratching, and does away with a great deal of the excrements of the fowls. In the cold weather it is better to use rough chaff and dust, as that is light and dry to their feet for them to scratch about in. I never recommend poultry people to spend a shilling where sixpence would do. Moss peat is a splendid thing to be used in chicken coops, especially early in the season, and also in pens for fowls when they are being prepared for show purposes, as it keeps the birds beautifully clean and sweet,



WHICH ARE THE BEST FOWLS TO KEEP ?

**Strain, not breed, the index of excellence—Good crosses for profit—
Sitting varieties and non-sitting varieties—where to keep one or
the other for the best results.**

THIS question is one of the most difficult to answer, as different strains of the same breed of fowls vary very much in their egg-producing properties ; and I have often known one bird lay well, while another of the same breed was anything but a good layer. A great deal also depends upon the place and circumstances under which the fowls are to be kept.

I consider Houdan-Cochin, Houdan-Orpington, Houdan-Indian Game, and Houdan-Dorking, (as a result of my last few years' experience), stand at the top of the list for general qualities—winter laying and table qualities combined. Game Dorkings are considered tip-top table birds by many writers and breeders, and I have proved them to be really excellent birds, particularly when kept till from five-and-a-half to seven months old, but Houdan-Indian Game

grow much quicker and are ready for table much earlier, often three weeks, and the pullets will frequently lay a month, sometimes six weeks earlier. I have made careful calculation, and taking the extra number of eggs laid and the rapid growth of the chickens into consideration, I find these birds produce from 10 to 15 per cent. more upon the year's return than the Indian Game Dorking. The Houdan cock cannot be used with the wrong birds. It is the king of all the non-sitting varieties to be used for crossing. Houdan-Leghorns are marvellous layers. I find they will, taking the whole year through, lay as many eggs as any cross I have tried, because both breeds are non-sitting, but they are not such good table birds as the Houdan-Indian Game. In 1895 I tried a fresh experiment, viz., crossing the Houdan cock with Buff Orpingtons (the latter is a new variety, a description of which will be found in the end of the book). The Buff Orpingtons have white legs and skins. The legs of the Houdans are a mixture of blue and white. When the breeds are blended together nearly all chickens have white legs, and grow very fast, and are ready for the table earlier than any cross I have ever tried; I have had them weigh 3 lbs. 3 ozs. at 13 weeks old, and at four months and a fortnight old $5\frac{1}{4}$ and up to $5\frac{3}{4}$ lbs., from $\frac{3}{4}$ to 1 lb. each heavier than Game Dorkings hatched at the same time.

The following crosses, viz.:—Plymouth Rock-Brahma, Plymouth Rock-Langshan, Plymouth Rock-Cochin, and Plymouth Rock Indian Game make good winter layers, where the situation is cold, damp, and exposed to the north-east winds. They also produce very fine brown eggs, and

make excellent sitters, and can be depended upon for that purpose. They are also the best of mothers and can cover their chickens well from the cold east winds. They are good hens to send on a journey when broody, as the sight of the eggs usually brings them to the nest at once, and they forget they are in a strange place. They are valuable, as they can be depended upon. I may mention that these crosses may be kept either in confined runs or in an open space, and will not disappoint their owners. They are like young turkeys on the table—one will serve a good sized family. When early chickens are required these crosses are the best to keep, as they come broody early in the season, and can be depended upon, as they have so much heat in themselves. They can be set on goose, turkey, or duck eggs. For general purposes I find nothing better than the Houdan cock, mated with Plymouth Rock, Langshan, Brahma, Cochin or Orpington hens. When the pullets are hatched from a good laying strain, one is equal to the other. They come so much alike it is hard to distinguish them from each other when side by side. If bred from a good laying strain, the results for twelve months will not vary ten eggs. Of the five, the Plymouth Rock or Orpington crosses are the best table fowls. They have more breast-meat, and are usually free from feathers on the legs. The laying results are just as good when a Minorca cock is used with the four breeds mentioned, but the cockerels are not quite such good table fowls, as they are not so full in the breast, but they are excellent in flavour, very white and juicy. As a rule the eggs are about the same size as if a Houdan cock had been used. The pullets from all these crosses will stand

confinement well, or do well if they have an open range. They cannot easily be put out of their place. Most of them lay a tinted egg, some quite brown; they are large and saleable anywhere. Those who have tried these crosses have not been disappointed, as they are such good winter layers. Some object to keeping birds that come broody. In this case I recommend a Houdan-Minorca or Houdan-Leghorn cross (I have had the best results from Houdan-Leghorn) as the best to keep, as these are excellent layers of white-shelled eggs. They stand confinement well, and if sheltered a little from the cold winds eggs will be found in the nest all the year round. The Golden-Spangled Hamburgh Cochin are very handsome birds, more so than any other cross. They are extraordinary layers, both winter and summer. The eggs are of a fair size; most of them are brown or tinted. They make fair table birds, rather small, but of excellent flavour. They will stand confinement, or search well for their living when they have their liberty. It is rather difficult to get the eggs fertile. They are the choicest cross I know, but if bred from again to maintain their excellent laying qualities, and to improve them as table birds, a Houdan cock should be used. The Game-Dorking cross are excellent for the table, but only moderate winter layers. They come broody very often during the spring and summer. I prefer Houdan-Dorkings if eggs are required as well as good table fowls, as they are much better layers. Some people prefer the Plymouth Rock-Dorking to the Game-Dorking, but the latter is of rather a better quality though not quite so large a bird. The Game-Plymouth Rocks are very good, and I prefer them to the Game-

Cochin, as they make so much better table fowls, although not better layers ; they make good sitters and mothers, and may be trusted with valuable eggs. They are very strong in the wing to cover their chickens from the cold winds. This cross is very good for gamekeepers. If one has a fancy for pure bred birds, and the place is cold and damp, I recommend the Orpingtons and Wyandottes as the best, having no feathers on their legs to hold the wet and damp, and they are more active than the Cochins and Brahmas. The Langshans are also good for this purpose, although I give the Orpingtons and Wyandottes the preference if the place is cold and damp ; they do not show the dirt and smoke as many other breeds do, they stand confinement well, and lay a brown egg. The Wyandottes stand confinement fairly well, and are good layers of brown eggs, but they do not breed true to colour. The Golden Wyandottes I have found lay better through the winter than any other breed except the Orpingtons ; both these breeds are about equal in laying qualities during the winter months, the Orpington excelling the Golden Wyandottes only in table qualities. As a non-sitting breed Minorcas are excellent. I prefer them to the Houdan, as they are not quite so subject to colds when in the pure state. They stand confinement well, and will lay all through the winter months if sheltered from the cold winds. This breed is the most popular of the non-sitting varieties. They lay a fine white egg ; the chickens are hardy and grow fast. Leghorns are also excellent fowls as non-sitters ; they are remarkably hardy, and will lay more eggs in the cold winter months than the Minorcas. They are the the hardiest fowls I know,

especially the white variety ; the chickens thrive anywhere. The eggs are not quite so large as the Minorcas, and neither do they make such a good table fowl. In confinement they stand the cold much better than the Minorcas. The Andalusians are excellent layers of large white eggs, but these are very difficult to breed true to colour—black, white, and blue birds often appearing among them out of the same brood. They stand confinement well, and if they have shelter they lay during the winter months. The Dorkings are not so good to keep in confinement when in their pure state. I do not recommend the Hamburgs for confinement, as the Leghorns are so much hardier and lay more eggs during the winter months. The black variety is rather the hardiest, the golden and silver-spangled next ; the pencilled varieties ought not to be reared in confinement. Game fowls ought not to be kept in confinement if wanted for profit only. Every breed of fowls will lay in the winter, more or less, if bred from a good laying strain and treated properly. It is not so much a certain breed being good layers, as a matter of being bred from good laying strains. I have had two birds of the same breed running together, and treated in the same way, one having laid over 260 and the other only 90 eggs in twelve months.

For tropical climates, the non-sitting varieties, viz., Hamburgs, Houdans, Minorcas, Leghorns, &c., and their crosses are best ; while for the colder and more changeable countries, the hardy feathered-legged tribes, such as Cochins, Brahmas, Langshans, Plymouth Rocks, Orpingtons, &c., and their crosses are best ; and for extremely cold climates

I recommend the Game and Cochin as well as Game and Cochin crosses. Strange to say, I have had many letters from Australia, New Zealand, and Africa, stating that they have never had birds lay so many eggs in 12 months in their climates as the Black Orpington.



FEEDING.

Past mismanagement and its results—Soft food, and how to mix it—
Meat for Fowls—Eggs without shells and how to avoid them—
Feeding with troughs—Stimulants for sluggish fowls—Grit, maize,
and egg shells, hemp seed, and boiled grain—Fish diet and fishy eggs
bring "fishy" financial results—Herbs and green food for fowls.

ALTHOUGH much good information has been given on the subject of feeding poultry during the last few years, they are often mismanaged in this respect, the reason being that seven poultry-keepers out of ten consider their birds are fed properly if some hard corn be given them two or three times a day. Another great mistake is made by many people, who think that any quality of food does for poultry, and therefore they give their birds any poor stuff they come across, and this is more especially the case with farmers, who only feed with poor thin corn, that they cannot use for anything else. Tail or thin corn should never be given to poultry whole, but should be ground and given in the form of meal, as there being so much husk the nutriment is extracted so much quicker if it be ground up ready. There are also many who never give their laying fowls meal, as they consider it would only be a waste of valuable food; but this is also a great

mistake, as fowls fed once a day on meal will produce at least 30 to 40 more eggs per bird in the year than others in exactly similar conditions that are only fed on hard grain, and these would be produced when eggs are most valuable, viz., through the winter months. The reason of this is that the hard corn takes a certain time to get soaked in the crop and ground in the gizzard, while soft meal passes into the system immediately, and gives the fowl nourishment at once, thereby enabling it to consume (or turn into flesh or eggs) more food than if fed only on hard corn.

It will, therefore, be seen by the above remarks that it pays best to give soft meal once a day, and this is best given in the morning, and may consist of nearly any meal—such as barley-meal, oat-meal, buckwheat-meal, &c., mixed with fine and coarse middlings, or “sharps.” The quantity of “sharps” used depends greatly upon the other meal, but it will generally be found that one part of the barley-meal with one part of fine, and one of course “sharps” make a very good mixture; but the best thing is to use biscuit meal, as this prevents it sticking; pea-meal may be used occasionally with “sharps” for a change; but bran should also be mixed when pea-meal is used. Whatever food is mixed for laying hens a great deal of bran should be mixed with it, especially in spring and summer when the birds are being bred from, as there is more bone making material in the bran than there is in the flour. The meal should always be mixed with hot water, or hot skim milk is better if it can be had and given warm, especially in the winter months. Care should be taken not to mix it too wet, as it is not good

for the fowls when it is sticky and clings to their beaks. Any fat or scraps from the table can be mixed with the meal, and in the winter, if there are not many scraps, it is desirable to buy some liver, lights, paunches, or tripe (the sheeps' paunches can be bought for 2d., and the tripe for 1s. each, the latter weighing from 9 to 18lbs. each), and give to the fowls the last thing before they go to roost, as they will then eat ravenously of the meat. If, however, it is given with or before their corn they will eat the meat and refuse their other foods. The lights, &c., must, of course, be boiled, and the water in which they are boiled should be used to mix the meal. Where one has not time to boil up and prepare lights, &c., it is more convenient to use granulated meat in the soft food, as that does not require any boiling. It is best to pour boiling water over it, and then mix it with the meal while it is hot. Any vegetable refuse, such as small potatoes and cabbage, or pieces of fat meat may also be used, as when these are mixed up with good meal, they make a first-rate food. Turnips, mangold wurtzel, in fact nearly all vegetables, may be used in the same way, especially in the winter months, when green food is scarce; these should be thrown down so that they can peck at them.

In the autumn and winter the fowls should have their morning meal as hot as they can eat it, and it is well to give them warm water to drink, first thing in the morning, when the weather is cold, as after drinking cold water they will often stand moping about with one foot up, whereas the warm water seems to revive the whole system on a cold morning. Poultry powders (as advertised at end of book)

should be used in the soft food three or four times a week, commencing not later than the last week in August or first week in September, as that helps them through their moult, and brings one or two-year-old hens on to lay through the winter, also the young pullets. When hens stop laying or are not doing well in the summer a little poultry powder should be given, as this pulls them round, and they commence laying almost at once. The owner or attendant should discontinue using it after the fowls come on to full lay during the summer months as it is not necessary. Also, it is very beneficial after the birds have had their warm breakfast, if they have no covered run, to drive them back into the house for three or four hours. After they have been driven into the house for a few mornings it will become customary to run into the house after having had their breakfast. Of course they must be fastened in, but a wire door should be used so that air and light may enter.

If the simple rules I have given in this book are followed, eggs will be found all the year round. Biscuit-meal is one of the best meals that can be used, given alone, or occasionally other meals mixed with it. When this meal is not used, a little oyster shell, mixed with the meals already mentioned, helps them very much, as it not only furnishes material for making the shell, but assists in digesting the food, and is far superior to old mortar. If the fowls do not have lime in some form or other it weakens the laying birds very much, and often causes them to lay eggs without shells. When this occurs they are apt to break before the fowls can pass them, and when this is the case the fowls often die or are ruptured for life ; but more often

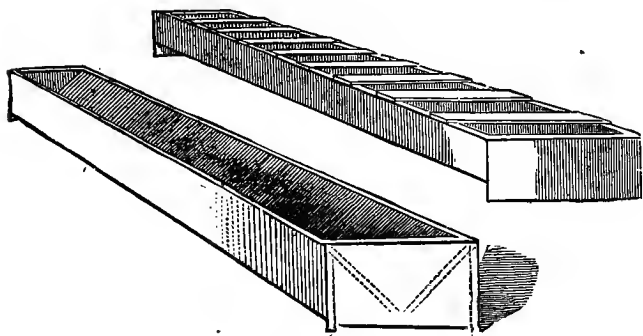
they are found dead on the nest or underneath the perch in the morning. In the breeding season very fine flint grit or flint dust should be used, as this helps the egg organs very much, and the chickens hatch out much better, as this makes the shell more brittle. It is well to use a little salt for flavouring the soft food occasionally.

The following table will show the different proportions of flesh-forming, &c., ingredients contained in wheat, barley and other grain, &c., used for feeding poultry. It was, I believe, originally published in the *Poultry Diary*, but the copy given is taken from L. Wright's *Book of Poultry* :—

There is in every 100 parts, by weight of	Flesh- forming material like gluten, &c.	Warmth-giving and fattening material, viz :—		Bone- making materials or mineral substances.	Husk or Fibre.	Water.
		Fat or Oil.	Starch.			
Beans and Peas	25	2	48	2	8	15
Oatmeal	18	6	63	2	2	9
Middlings, Thirds, or Fine Sharps }	18	6	53	5	4	14
Oats	15	6	47	2	20	10
Wheat	12	3	70	2	1	12
Buckwheat	12	6	58	1½	11	11½
Barley	11	2	60	2	14	11
Indian Corn	11	8	65	1	5	10
Hempseed	10	21	45	2	14	8
Rice	7	a trace	80	a trace	...	13
Potatoes	6½	...	41	2	...	50½
Milk	4½	3	5	¾	...	85¾

In the preceding remarks, I have mentioned what are the best things to feed poultry on ; but perhaps the most important is when and how to feed, and what quantity

to give ; and although some writers mention certain definite allowances for each fowl, the exact quantity must be left to the feeder's discretion, as fowls vary so much, two birds sometimes often eating as much as six at others : some weigh the quantity, while others measure it out ; the golden rule is never to give one morsel more than the birds will run after quickly, if thrown some distance from them, and on no account whatever should food be left lying about or in troughs, and should any food be left from one meal, less should be given at the next, as not only does the sight turn the fowls against it, but it also attracts sparrows, mice, rats, &c., and the latter are not content with the food alone, but often kill the young chickens as well. If there is a dry piece of grass or gravel, the fowls should be fed on it ; but



FEEDING TROUGHS.

where there is a covered-in shed, or out-building with a lot of loose stuff at the bottom, a good deal of the corn should be thrown in the covered-up part ; as this gives the birds

scratching exercise: this is especially valuable in cold weather; in the winter and wet weather both meal and grain should be given in the troughs, unless a very clean dry place can be had, as otherwise the dirt sticks to the food, and makes it very injurious to the fowls. Another advantage in feeding with troughs is that they may be taken away directly the birds have had sufficient, if they have not eaten quite all of it.

In spring and summer the fowls should be let out of the house for half-an-hour or so before giving them their breakfast, as this gives them a better appetite for their food. In the winter months, and more especially in October, when the mornings are chilly and many of the old birds are moulting, poultry require very generous treatment, and at this period they are better for a little stimulating food, such as hemp seed, &c. The poultry powders will be found very beneficial for health and egg-production all through the spring, autumn and winter months, as they strengthen every organ of the body, enabling fowls to produce a larger number of eggs, and do not leave them weak, as many other laying powders do. They impart vigour to the birds, cause their combs to be redder, plumage more glossy, and make a marked difference in them before the powders have been used ten days. They have been used these last few years with great benefit for rearing chickens, pheasants, turkeys, and early ducklings by hundreds of breeders.

These little attentions take time and money, but the fowls pay well for them, as, when they are thoroughly well looked after and fed on warm, stimulating food, they will often lay while they are moulting.

One of the things almost universally neglected, although most important for poultry in confinement, is a good supply of sharp grit, for without it they are unable to digest or grind their food. A miller cannot grind his corn without stones, and it is the same with poultry, and if they fail in getting a supply of small sharp stones (which the greater part of the grit should be composed of) they suffer in health, as these things are to poultry what teeth are to human beings and animals—they digesting or grinding their food with small stones or grit, while we masticate ours with our teeth.

When I have had poultry suffer in health and die, I have opened them and often found an absence of these necessities, and very often when fowls mope about and do not care to eat their food, it is simply for the want of these small stones, and very often, when in this state, they do not care to pick up the small stones, &c., in which case some should be mixed with the meal, and forced down their throats, when, as a rule, they will soon be all right, their aversion to the grit only being the outcome of their weak condition.

The round shingle which is sent from the seaside, and used by hundreds as grit, is simply useless, as it, being round, cannot perform the necessary work. Very sharp small stones are required, in fact the edges cannot be *too* sharp. The friction caused by the action and weight of the water rubbing the stones together causes them to become in time as smooth as glass. Egg-shells help to form the new shell; but they should be broken very small before being given to the fowls, otherwise it may teach them to eat their eggs. Small sharp stones, such as may be obtained at the

bottom of steep country roads after a storm of rain, or ordinary road scrapings, are good for poultry, the former being by far the best, and if none of the above can be obtained, flint stones can be broken up small and given them, as grit they must have in some shape or other. White crockery ware or glass can be broken up small and given to them, the largest a little smaller than a threepenny piece. Fourteen pounds of grit broken with a hammer out of solid black flints go farther than $\frac{1}{2}$ cwt. of ordinary grit run through a machine, and unfortunately, for results, a great part of the grit sold at the present day is machine broken, and very often sea shingle ground smooth by the action of the waves. It is money wasted for people to buy such stuff for their birds, but it is cheaper, and cheapness is the rage of to-day.

Too much maize is not good for fowls, as it brings on -- liver disease sooner than anything I know. It makes too much internal fat, and also makes blood too fast. Fowls that are fed liberally on it are lined with yellow fat, especially in the abdomen. I have taken it out when it has been half-an-inch thick. The egg organs become so weak the hens lay eggs without shells. Even this is not the worst part of it, as fowls that have liver disease are susceptible to many other diseases, especially roup. It is not always the liver that actually kills them. It is very often that other diseases follow through their being in a weak state. When roup has been incurable, I have found on examination that the liver was diseased, being full of tuberculous matter—it is commonly called scrofula—having white spots on it. Sometimes they are only as large as the

head of a pin. When roup has been incurable, I have found in most cases they have had liver disease, and in a few instances tumours, which maize is very liable to bring on. In cases where only the ordinary scrofula is coming on, tuberculous substances form in small yellow spots, about as large as the head of a pin; these sometimes develop so quickly that they are a quarter-of-an-inch through and the liver more than three times the ordinary size. I have weighed it when it has been from 9 to 11 ozs.; the ordinary weight should be from $1\frac{3}{4}$ to 2 ozs. Inbreeding also brings on liver disease. There are more fowls die of this disease than all the others put together. Insufficiency of sharp grit, feeding on Indian corn, inbreeding, and bad ventilation in the houses are the four greatest enemies to success in the poultry yards. I have known farmers use maize for years together, and it has affected the progeny so that they could scarcely rear a chicken. They died off when from four to seven days, and from three to six weeks old. It is used so largely because it is such a cheap food, and fowls seem to prefer it to any other grain. A little maize for a change does not hurt the fowls, especially in the cold weather. I use more wheat than any other grain, as that does not make so much internal fat as most other grains do. Next to wheat I use French buckwheat, barley, and a good deal of dari during the spring and summer months. Good oats are a splendid grain for a change, but they ought not to weigh less than 40 to 42 lbs. to the bushel; if 44 lbs., so much the better. Hempseed is also an excellent grain for the breeding season, especially for the male birds. If this

seed is given, there will not be many unfertile eggs. It helps them very much. It is also very good in the autumn through their moult, as it is stimulating. It is used largely for bringing young chickens into good condition for the show pen. It is well to change the grain, as the birds like variation.

From October to March it is well to give corn softened by boiling from 15 to 30 minutes, and standing the pot on one side till it soaks up the water used for boiling, giving it to the fowls when hot. Care should be taken not to boil the grain too much, or use too much water, as it causes it to burst and become very sticky, in which state it is not at all liked by the fowls.

They ought not to have as much boiled corn as they can eat, but should have a little hard corn to finish up with. When meat is given to the fowls, care should be taken to cut it into pieces, of moderate size, just so that they can swallow it easily. If left in large pieces, one hen gets hold of a piece and runs away with it, and while she is trying to peck it to pieces, the others eat all theirs, and then have a good run to the large piece, in which case the hen which ran away with it usually has none, and worse than this, the hen that swallows the large piece often gets into trouble, as it sometimes causes a stoppage in the passage between the crop and gizzard. The better plan is where a large number of birds are kept, to run the meat through an old sausage chopping machine. When fowls are deprived of a grass run and fed liberally, and at the same time are rather short of green food, their blood gets very hot, especially in the spring months. It is well to use a little flour of sulphur occasionally

(sometimes called brimstone). There are two sorts, the dark and the yellow ; the latter is the best ; one heaped-up teaspoonful for ten fowls is the quantity to be used. Sulphur, unfortunately, causes the eggs to have a strong taste. This is partly counteracted by using the same quantity of common salt as sulphur. It is not well to use this medicine too early in the spring, as it opens the pores of the skin too much if it is given in cold weather, or when the cold wind is blowing. One heaped-up teaspoonful of mustard to ten fowls, given once or twice a week, will help them very much, especially if they are breeding stock ; the same quantity of sulphur, mustard and salt to be given.

Fish is also a very good thing to give stock birds, but where the eggs are to be eaten it should never be given, and where eggs are sold for eating, the customers will be sure to fall off, the musty or fishy taste which this kind of food gives the eggs leads people to fancy the eggs are stale, and, of course, this is fatal. English people do not cultivate herbs as they ought for the use of their poultry. There are two herbs most useful in the poultry yard, and yet they are trodden under foot and thrown on the rubbish heap, or rooted up altogether as the most wretched things that grow. These herbs are stinging nettles and dandelions. The stinging nettle is one of the most cooling for the blood that can be found among all herbs. At the same time fowls do not catch cold after having them (as they are liable to do with sulphur). The nettles should be got when young, they can be cut short and boiled, and then mixed with the soft food, and the water they are boiled in will also do to mix with their food. If there is not time to boil them,

they can be put in a vessel of some kind, and boiling water poured over them. Cover them over, so that the steam cannot escape, then the liquid may be mixed with the meal ; also add a little salt, but the nettles themselves should not be given when they have not been boiled, as they are not tender enough for fowls. When given in this way they are both food and medicine. It is rather difficult to gather them, unless a glove is put on to handle them. They can be cut with a knife or scissors, not pulled ; then they grow again very quickly. Nettles are invaluable for fowls. Dandelions are an excellent herb for the liver. They will often put the poultry right when everything else fails, especially when fowls are kept in confined runs. The leaves can be pulled from the roots and cut in small pieces, and given just in the raw state. If the roots of these two herbs are set in the autumn- or winter (not later than February) they will grow anywhere if they are put underneath the soil. The nettles can be found by the side of hedges, and dandelions by the roadside, or on any waste piece of ground. They have a yellow flower which grows upon a round stem. Watercress is an excellent green food for poultry, but rather too dear to buy. Where there are many poultry kept, and spare ground at command, cow-cabbages are the most economical to use, as they grow very large, and if grown properly, one is sufficient for fifty fowls in one day ; the fowls are particularly fond of them. A mangold wurtzel for a change is very good. It is well to cut them in half ; then the fowls pick out the middle and there is nothing left but the skin. Those who live in towns, and have but little space, cannot grow cabbage or lettuce,

but they might sow rape, mustard, maize; wheat, barley, oats, or any kind of grain. These can be grown in boxes with a little earth and manure, and must be well watered. The seed springs up very quickly, and in the hot weather is ready in a few days. By having seven boxes, and sowing every day, there is a daily supply of green food.

The maize springs up twice or three times without sowing again. It can either be cut, or the box placed in the run for the fowls to peck it off. The size of the boxes must vary according to the number of fowls kept; not more than two or three inches of soil is necessary in the boxes. If the space is very limited, the boxes can be placed on the top of the fowl-house, but in the sun as much as possible.

This green food can only be grown in the summer months.

Where fowls are kept in small places and cannot get much exercise, it is well to bury all the corn that is given to them, as scratching for this gives them good exercise, and keeps their fat down. Fowls, if they are put in a long coop and fed well, and have something loose to scratch in, would do well, and lay all through the winter.



HOW TO BREED, AND WHAT TO BREED FROM.

Good birds kept shew truest economy—Fertile eggs : how to ensure—
Artificial incubation—Incubators : their defects and disappointing
results—Foster mothers—Sitting and Hatching.

ONE of the most important points towards successful poultry keeping is to breed only from the best birds, and never on any account to set an egg from an inferior layer, or sickly bird. If, on the other hand, fowls are required for table, only good-bodied birds should be selected, with long deep breasts, and these bred from with a pure cock of good table variety.

To shew the importance of careful selection. It does not matter how many breeds a hen may have in her if she is a good layer, and mated with a pure bred male bird (in all cases breed from such birds), the result will be good, as the pullets lay from a month, six weeks, or sometimes two months earlier than they would if a cross bred or mongrel male bird had been used. I wish to impress upon my readers that it is very important to use pure male birds with every sort of hens, whether mongrels, first crosses, or pure hens of another variety, as these produce eggs just in the

Autumn and early part of the Winter when eggs are valuable, at the same time it saves so much food &c., as the pullets do not have to be kept so long before they lay.

Where fowls are kept for laying principally it would be an easy matter to detect the best laying hens, as these are sharp-looking intelligent birds, with bright eyes, and a nice sleek-looking head, and are usually out first in the morning and go to roost last at night. If my readers will refer to the engravings of heads given, they will see at a glance the difference in appearance of the eyes and head generally of the two birds, and so save a great deal of trouble and expense, as ten good layers will produce more eggs than 30 bad ones, during the winter months, at about a third of the cost. It is always best to have a pure bred cock, as most pure breeds have some distinctive quality that it is well to introduce into mongrel birds. It must always be borne in mind that while a bad hen only causes a portion of a brood to be inferior, an indifferent cock spoils the whole stock for that season, as all are related to him.

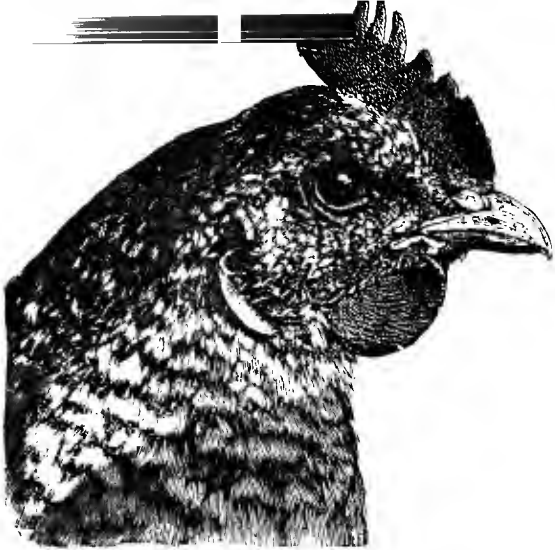
The number of hens to be allowed with each rooster, to obtain fertile eggs, differs according to the nature of the bird, but, as a rule, a Cochin will take from four to six hens, and a Brahma from six to nine, while in most other breeds one cock with eight hens, or even 15 would not be too many. When fowls have a large range, half as many more hens may be allotted to run with him, and the eggs will prove more fertile, but more of this in chapter on Pure Breeds and First Crosses. A heavy Cochin or Brahma, if he will breed, will not manage half as many hens as a smaller one. I have known as many as thirty hens running with one cock, and



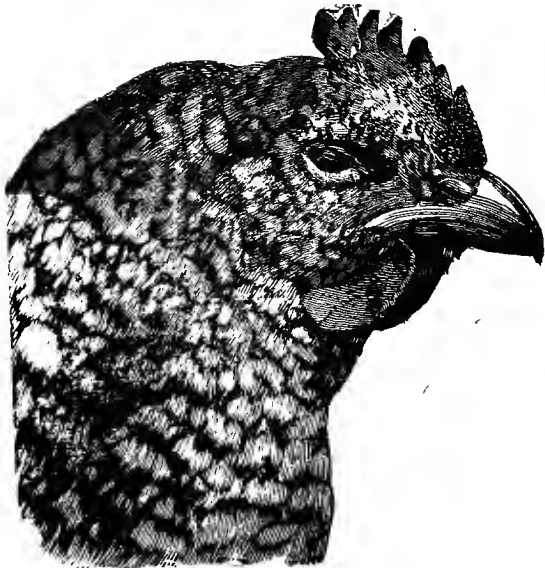
LIGHT BRAHMA.
GOOD LAYER.



LIGHT BRAHMA.
BAD LAYER.



PLYMOUTH ROCK—GOOD LAYER.



PLYMOUTH ROCK—BAD LAYER.



BLACK ORPINGTON.
GOOD LAYER.



BLACK ORPINGTON.
BAD LAYER.



CROSS-BRED HAMBURGH-BRAHMA.
GOOD LAYER.



CROSS-BRED HAMBURGH-BRAHMA.
BAD LAYER.

early in the season all the eggs were fertile, but not for long. The subject of mating is little understood by many people, even some of those who keep a large number, as some put four hens with one cock, thinking by this means to get all fertile eggs; the results generally are that very few become fertile; while, where seven to ten hens are put with one cock, nearly every egg is fertile. Of course, there are exceptions, but this most certainly is the rule.

Too much attention cannot be given to the subject of introducing fresh blood into the poultry yard, as the chickens never make such fine birds, and are seldom so strong and healthy when the parents are related.

ARTIFICIAL INCUBATION.

Artificial incubation is very much in vogue at the present time, not only where large numbers of chickens are required, but also where a very limited number are kept, especially by ladies who have time to attend to them properly. Cottagers frequently make their own incubators. Some of them answer very well, hatching 12 chickens out of 15 eggs. The high price of incubators prevents the working classes investing in them. I feel sure a much cheaper one could be produced than those already in the market. I have tried several makers' machines, and many have come under my notice, but I find but few makers turn out all good machines; that is, some of them fail to do their work, and yet to all appearance it is no fault of the makers. Hearson's is the only machine that I have found strictly reliable, and this I am bound to confess, after having tried many; it most certainly is the best in the market up to the present.

The old saying is, "there are as good fish in the sea as have ever been caught," and doubtless it is so; but the difficulty is to know just where to drop on them. I have heard several say Mr. Greenwood's (of Bedford) machine hatches very well indeed. As far as I can hear it stands nearest to Hearson's for results. Of course, it is possible some one will bring out a machine to equal or surpass Hearson's, but it has not appeared yet, though many advertise their productions as the best. I may mention here I have known scores of poultry people in my travels who have bought incubators, and have placed eggs in them, and have spoiled almost every egg they have put in during the season, and in some cases I have known the machine has been burned up in despair, as not a single chicken has been hatched during the whole of the season. It is not only the sacrifice of the first cost of the incubator, but the loss of birds for egg-producing the next season, and the wasted time which cannot be recalled; the next season there are no pullets for laying, neither fowls for the table. I do not wish to be too hard on incubator manufacturers, but several have been brought out and many machines sold, and I have never heard of a single chicken having been hatched by them. I may mention this to warn poultry people against buying machines whose maker's have no reputation. Where the people bringing out new incubators make a mistake is they do not test their machines sufficiently, or experiment upon them enough, before sending them out to the public, and so poultry-keepers learn afresh in many instances the wide difference that exists between theory and practice. There are two machines out now that I am told are working

fairly well, Mr. Greenwood's I have already mentioned, and Sharland's Machine, of Oldham. Of course, I do not give this as actual, personal experience, but as the opinion of breeders, who have tried them and found them to work successfully. I am much more in favour of incubators now than I used to be, as they are much improved. They are easily worked, and save a great deal of trouble running after hens. Another advantage is, the eggs can be put in every few days while they are fresh (by those who breed from their own poultry). I always use Hearson's machine on my own place. If fresh eggs are put in the drawer with others previously in, a piece of flannel or cotton wool should be put between them, as the cold eggs are apt to chill the others, especially if they have only been in a few days. If they are near hatching it does not hurt them. I am often asked, Which is the best in the market? For some years I was uncertain, until I had tried so many that failed, and have come to the conclusion that Hearson's is the best as already stated. A really good incubator is a great boon to poultry-keepers. There are some people who think that if chickens are hatched in an incubator they do not grow so large nor do so well. This is only superstition: they do equally as well if taken care of. They are not so liable to vermin as when hatched under hens, as the hen often becomes infested with vermin while sitting, and then of course the chickens get them as soon as soon as they are hatched. Care must be taken to dust the hens with insect powder specially prepared for this purpose. I think there is a larger proportion of cripples hatched with an incubator than under hens, but there are no chickens killed by the incubator as there are by the hen

trampling on them, so, of course, one makes up for the other. Incubators are a great convenience, save time, can be worked at any period during the year, and there are many who enjoy attending to them. A few common eggs should always be put in first to see if the incubator works right. This frequently saves disappointment, as it takes a few days to get it into working order. When non-sitting breeds are kept, they are indeed very useful.

FOSTER MOTHERS.

When poultry keepers hatch by incubators they want to rear their chickens. There are few who bring these up by hens, but the easiest plan is to rear them by a foster mother. I have tried various machines made for the purpose myself, but find few only are satisfactory and all might be much improved. Mr. Hearson's new foster mother, recently introduced, is spoken very highly of. Mr. Greenwood has also brought out a foster mother which I have tried and found to answer very well. Miss Wilson, of Kendal, has brought out a small one which answers well for a small hatch of chickens if the weather is not too cold.

SITTING AND HATCHING.

Opinions vary regarding the proper way to set hens, for while some persons prefer a nest on the ground in a damp situation, others always set their birds in as dry a place as possible. I have found the best way is to imitate Nature as much as possible, for, as a rule, hens that choose their own nests usually bring off large broods.

If a hen that is sitting in a stolen nest is watched, it will be observed that she chooses a dry, secluded spot for her

nest, and though the ground may be dry when she selects her nest, the heat from her body draws a certain moisture from the ground to the eggs, which of course, is a very gradual moisture ; she also leaves her nest early in the morning to search for her food, and as the grass is quite wet with the dew, the bird's breast feathers also get wet, and in this state she returns to her eggs, and consequently damps them.

It will therefore be seen that it is best to make the nest on the ground, and to cover it in from the others. Where possible, a separate house should be used for sitting, and the hens left quite to themselves ; but this can be dispensed with, and a nest made in the usual house, and covered over with an old piece of bagging, &c., so arranged that it may be easily moved every morning.

The best way to make a nest is by scooping out a little earth from the floor, and then beating the soil quite firm in the shape of a nest. Where the earth cannot be removed, a few shovelfuls should be obtained, and moulded into the same shape in an ordinary nest box. It is easier to make a nest with loose earth than a turf, and the soil should be damp and well beaten down with the hand. An old glove should be worn to protect the hand against thorns or broken glass which might be in the soil. If the soil is damp it forms a crust and holds well together.

The nest should be made quite round, so that all the eggs are covered if the hen alters her position. It should be hollowed somewhat in the centre, in order that the eggs come together, and do not roll out of reach when the fowl steps into the nest. Plenty of room must be given, as, when a bird is cramped in sitting, many eggs get broken. The

nest should be lined with fine hay, just at the bottom of the nest, in very cold weather. Hay is much better than straw, as it sticks closer together, and therefore holds the warmth better, and the hen may consequently be allowed more eggs. Straw being hollow, it conducts the cold air to the eggs, especially in frosty weather.

When it is required to set fowls in a strange nest it is best to put them on their new nest at night, unless very tame. They should not be forced or hurried, but ought to be placed in front of the nest they are to occupy, with a few common eggs in it, when they will generally take to it at once, and if not disturbed again too soon they will stick to it and sit well. Some hens, however, *will not* sit in a strange nest, and the only thing that can be done with them is to patiently allow them to have their own way, or else not to set them at all. Hens that have travelled a journey, or have been removed, should be put in a coop, and fed well with hard corn and water, and then placed on their nest in the evening, and covered in so that they are partly in the dark, and should not be taken off the next day, but the day after. This enables them to be well settled down before being disturbed. For the first few days they should be fed in a coop or other small place; if not they become too wild and will not go back to their nest. They should be handled very gently. It is well to place the feeding-coop before the nest, so that the hen may see her nest; she will then walk straight on. Many people make a mistake when they have eggs from a distance by setting them immediately upon receipt; they should be allowed at least 12 to 15 or 20 hours to rest before putting them under the hen or hens, or in the incubator.

I cannot give the number of eggs that should be allowed a hen, as both the hens and eggs differ so much in size, and a great deal also depends on the state of the weather ; but for fair sized hens, about thirteen ordinary eggs will be sufficient in the early spring, but a larger number may be given if the hen be set in warmer weather. I have set twenty-four eggs under one hen, and hatched out twenty-three chickens ; but this is far too many as a rule, and if any doubt is felt as to the number to give to a hen, it is best to be on the safe side, and give one too few ; for if a hen has too many eggs, she may let a different one get cold every time she turns them—as a good sitting hen will turn her eggs twice in 24 hours—and thus spoil the whole batch.

When the nest is made without soil or turf, the outer skin of the egg becomes very dry during the last week of incubation, and the chickens usually hatch out very badly, and often one half do not crack their shell. To prevent this occurring, it is best to moisten the eggs slightly during the last few days. In moderate weather cold water will do to wet the eggs with, but in cold weather it is best to use warm. I find it best to dip them in warm water, and let them remain in for one or two seconds. The last three or five days of incubation is sufficient.

Should the hen break one of her eggs it should be removed immediately, and if any portion of the broken egg is on the others it should be wiped or washed off in warm water at once, and when very dirty a small nail brush and a little soap should be used, as when it dries it stops the pores of the shell, thus preventing the air passing through to the chick, as it must be understood that the chickens breathe at least two days before they are hatched.

The hen should be lifted off the nest every morning, and about the third morning she will rise up when her attendant goes to her. Care must be taken in lifting the hen, and this is best done by placing a hand under each wing to make sure there are no eggs lodged there, and then take hold of the legs with the fingers and lift steadily, letting the wings rest on the wrist. In cold weather the hen should not be allowed to stop off the nest more than fifteen minutes, but in warm weather she may be out from forty to sixty minutes. The nest should be closed to prevent the other hens going to it, and in very frosty weather it is well to cover up the eggs with a piece of flannel or wadding to prevent their being chilled, but this should only be done when it is very severe weather, as the more air the eggs get the stronger the chickens will hatch out.

A supply of dust or ashes must be kept in a dry place for the hen to clean herself with, and food and water must, of course, be placed so that she may help herself. As sitting hens go so long between each meal, it is best to feed them on some sort of hard corn, as this lasts much longer than soft food.

Sometimes a hen when sitting will lose her appetite. When this is the case she ought to have a little hemp seed, soaked bread, and pieces of meat. She must be tempted with these, as, if she does not eat she cannot sit her time, and the whole sitting of eggs will consequently be spoiled.

It is well to examine the eggs about the eighth day to see if they have chicks in. This may easily be done by turning them slowly round in front of a small lamp or candle in a dark room. If there is a chicken in the egg, there will be a

dark spot near the middle, about $\frac{3}{4}$ in. from the large end, while those that appear quite clear are unfertile. The brown shelled eggs are rather more difficult to tell, but if there is any doubt they should be left under the hen a few days more and then tried.

The unfertile eggs should always be removed, as it gives the others a better opportunity ; and where a large number of chickens are hatched, it is well to set three or four hens on the same day, and if many eggs are unfertile, those with chickens in may be given to two hens, and the other hen turned off or supplied with some fresh eggs, as it does them no harm to sit for a month or even six weeks, if they are fed well and taken off every day. This may be done all through the season, and by this means trouble is saved, and each hen will have a good brood instead of wasting time with only a few chickens.

The eggs that are set should always be marked in ink with the date they are placed under the hen, so that they may easily be known—this being always noted on the large end, as if it is put in any other position the black marks interfere with the testing of the eggs. The unfertile eggs that are taken away may be boiled hard and chopped up for the chickens, as they are quite sweet, and as good as many of the French eggs we use.

When the hen is hatching, I always find it best to remove the chickens every two or three hours, that is when they become dry, and it is therefore well to accustom her to the hand being put under her, or she will be restless and spiteful when the chickens are removed, or perhaps crush some of them or the hatching eggs.

As the chicks are removed, they should be placed in a box in wadding before the fire until they are all hatched, when the hen should be let out for a good run and feed ; for, as a rule, they do not come off the nest for two days before hatching. The chickens should then be placed in the coop, when the hen will walk in and brood them quietly. If the hen is very wild and restless it is best to leave her quiet to herself when hatching or she will flutter about and trample her chicks to death.

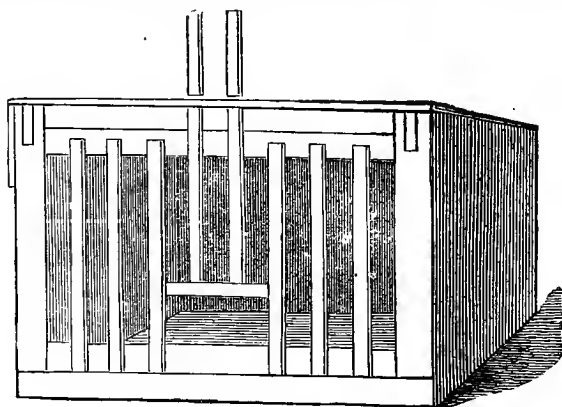
When the eggs are fresh—and none but fresh eggs should be set—they will often hatch in nineteen-and-a-half or twenty days, but if at the close of twenty-one days the eggs are not chipped, they should be examined, which may be done by tapping the egg and holding it close to the ear, when, if the chicken is alive, its beak will tap against the shell, or it will chirp. A small hole should then be made with a penknife, to give the chicken a start, at the large end. If the chicken is alive, the skin next to the shell is white ; if dead, it is a dark colour. After the hole is made, the egg should be turned gently round, to ascertain where the chicken's beak lies. Then break a small hole where the beak is. If blood flows, put it under the hen at once ; if no blood appears, the chicken can be taken out immediately. There are thousands of chickens die in the shell for the want of a little help. It is when the beak lies in a slanting position against the shell, and as the egg is oval, when the chick endeavours to free itself its beak slides. After making the hole in the shell, the egg should be placed under the hen for a few hours longer, and at the end of this time the chick will have drawn blood up into its body, and be quite prepared to leave the shell, if not already out of it.

CHICKEN REARING.

There are many different systems of rearing chickens, and I have tried most of them and found them answer more or less ; but I think that the following will describe the best and simplest method.

When all the chickens are hatched they should be placed in a coop with the hen, where they can get as much liberty as possible. If not cooped on or near grass they must be provided with a supply of green food chopped up small, and the more they have the better they will thrive.

There are many kinds of coops used, but the best is made with match-boarding, the size being according to the fowl ;

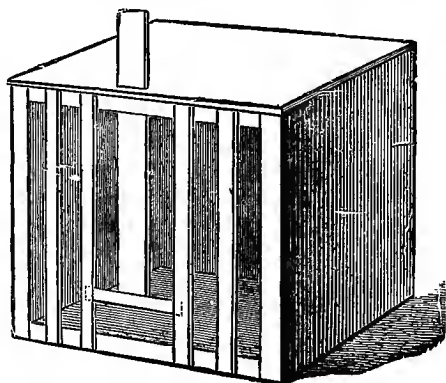


CHICKEN COOP.

a coop 2 feet square, or as some people prefer them 2 feet by 2 feet 6 inches, is large enough for any hen. This is quite heavy enough, because if coops are very large they cannot be carried through doorways or about the place.

A 6-inch board should be nailed along the top of the front part of the coop, and the pins or bars should run from this to the ground, not cross ways; they should be about $2\frac{1}{2}$ or $2\frac{3}{4}$ inches apart, so as to give the chicks plenty of room to get through. A little door may be made in the middle, about a foot wide, worked with hinges: or a better way is to arrange for one or two of the bars to fit in a socket, so that they may be withdrawn at any time and answer for the door. It is well to put a board from three to four inches wide at each front corner, as this prevents the draught cutting in. This kind of coop will be very light, and may be easily carried about, and will last for years if well tarred or painted and kept out of the wet when not in use.

There are many elaborate coops, much more expensive



CHICKEN COOP MADE OF A TEA CHEST.

than these, for those who wish to buy them, and there are also some less expensive that may be made out of an old

soap-box or tea-chest, after the cracks have been stopped with stiff brown paper pasted on and afterwards well lime-washed. As the roof will be flat, an extra piece of wood must be nailed on the top, to allow the water to run off. I have used coops made in this manner for many years, and found them answer well, as they may be made very snug and warm.

I always find it best to use coops with bottoms in them in very cold weather, so that a little moss-peat can be used to prevent the chickens' feet coming into contact with the cold boards. Chickens would be much better on the bare ground than on concrete or board bottoms without any loose stuff on them. Where people have only a very limited space to bring up chickens they should always have bottoms to their coops, as if they do not the ground gets very stale, but where they have grass fields or orchards it rather does the ground good than otherwise, and unless the ground is very wet chickens do well without bottoms, especially if the soil is chalk, gravel, or sand. Cramp comes through want of circulation of the blood in the legs and feet, or, in other words, the blood becomes chilled while it is passing through the chickens' legs and feet. If the cramp is not checked the toes refuse to do their proper work, and become doubled under their feet. When they get to this stage they soon begin to show a roughness in their plumage, denoting cramp is in the body. In very bad cases they become quite unable to walk. There are often more than half the early broods die with cramp. This is very discouraging after all the trouble of hatching them out, and early chickens are so very valuable, whether

crosses or pure-bred. When chickens first show symptoms of cramp it is well to catch them at once and rub their legs with a little turpentine. In bad cases it is well to use some spirits of arnica. This will soak in very quickly. A little vaseline should then be rubbed on the legs and feet after the turpentine or arnica has been used. The vaseline supple them and makes their legs and feet more pliable. It is well to wrap their legs up with a little cotton wool. This keeps them warm, and the blood soon circulates freely again. For binding up the toes refer to paragraph on "Cramp." Sometimes chickens are hatched with their toes turned under. When this is the case the splints, as described in "Cramp," must be put on in the same way. If chickens are kept under glass after they are a fortnight old they are very subject to cramp and many other diseases. It is not good for them to be kept entirely under glass, and therefore they should have their full liberty, if possible, however cold the weather. If there is a shed or cover of any sort that they can go under when they like, so much the better. When the weather is very cold or wet, the front of the coop should be covered with an old sack or bagging in the night; but in moderate weather they do just as well without any covering.

As chickens do not drink for the first day or two, they require something both moist and nourishing; hard-boiled eggs chopped up fine and mixed with groats or coarse oatmeal is the best food for the first day or two. The hen should always be fed with plenty of corn before feeding the chickens, or she will eat all the food intended for them. All of them may not eat the first day they are hatched, but if they

do not eat the second day they should be carefully fed once or twice with a few small pieces of egg and groats, and after this they will look out themselves. A supply of clean water must always be kept with the chickens in a shallow pan, and they may be taught to drink by putting a few pieces of groats or egg in the water. When the chicks are two or three days old they should be fed outside the coop on a board or sack, and it is a very good plan to sprinkle a little fine flint grit on the sack, as it clings to the food and serves as grit, with which they must be kept supplied.

After the chickens are two or three days old the eggs may be discontinued, and the food may consist of dry groats and biscuit meal. The latter should be soaked with hot water, not made too wet, if so it is liable to give them diarrhoea. A little soaked bread may be given now and then, this always being soaked in cold water, and if a little finely-chopped meat can be spared, it will help them on wonderfully. Chickens cannot be fed too often when young—every hour if possible, until a fortnight old, commencing with the rising of the sun and ending with its setting. No food must be left lying about or it will make them dainty. When a fortnight old, every two hours will be sufficient until they are about a month old, when they will do if fed every three or four hours. A mixture of meal is very good to use for the chickens, such as buckwheat meal, barley and maize meal, locust meal and sharps when they are growing large. This frequent feeding is for chickens in confinement. When they have a range in a field or orchard, especially in spring or summer, they get a good many insects, and do not require so much feeding.

Chickens thrive best if fed on groats, but as these are rather expensive, it is best to give them biscuit-meal when they are a week or so old, and this may be varied occasionally by using a little other meal, such as buckwheat meal, ground maize, oats, &c. The meal should always be given to them warm in cold weather. ,

Bone meal is very excellent for young chickens, as it prevents leg-weakness, and they grow so much finer, especially the male birds. It is a cheap meal, as they do not require much of it, and it can be used with any other meal. Proportion—about one pound of bone meal to ten of any other. More can be used if necessary.

Rice can be used for a change, and should be boiled ; it may be obtained cheap with the husk on. Potatoes, &c., are also very good for them, and as they are generally fond of these things it is well to give them plenty, for they will often eat them when they do not care for meal. It is best to feed the chickens on grain for the evening meal, and this should consist of groats for the first two or three weeks, and afterwards any kind of grain except maize, which must be kept out of their way until they are about six weeks old, as it is too much for them to digest. It will be found of great advantage to the chicks if the hard corn is boiled occasionally as described.

For the first week or two the hen should be kept in the coop ; but after this period she may be let out with the chickens to roam at will. Cottagers, however, should always keep the hen in the coop, and let the little ones run where they like, when they will not fly to be an annoyance in a neighbour's garden. The same remarks apply to others

than cottagers, and it is always well to place the coop in the midst of the kitchen garden, when the chicks will eat up worms, insects, &c., and thus prevent damage to crops ; but they must, of course, be removed as soon as they begin to scratch, and younger ones put in their place.

Gardeners may complain of the chickens being allowed in the garden ; but if they are allowed in while they are small, they will cause no harm, but will do a deal of good by eating up the small insects, &c., and especially the wire worms and slugs.

The hen should be allowed with the chicks until they are about six weeks old, when they will be able to take care of themselves, unless the weather is very severe.

When possible, the chicks should be allowed to roost out in a coop or in an open shed, until a short time before commencing to lay, when they should be put in the house with the others.

If chickens are fed in the manner I have described they will not require much fattening before they are killed, as they will be in first-rate condition for table. It is much the best plan to keep fowls in this way, for they may then be picked up and killed just as required, choosing the largest first, and leaving the others till they are in a better condition, unless required for market, in which case they must be well-fattened or they will not fetch a good price.

There is not sufficient attention given to the chickens as regards dusting themselves. When they droop their wings and their feathers look rough they ought to be caught and examined at once, especially round the head and under the wings and the abdomen, to see whether there is any vermin

on them, as when this is the case they cannot thrive. Some people use lime to destroy them, but this is not a good thing as it gets into chickens' eyes, and irritates the skin of the body very much. Insect powder specially prepared for the purpose should be used, as this kills the vermin and does not injure the chickens. In many districts some hundreds of chickens are lost through large ticks getting on the back of the head, and literally taking the stamina out of the chickens. I knew a case where, out of 1,000 hatched, over 800 chickens were destroyed from this cause. Chickens should be examined for these, and where found specially prepared ointment should at once be procured and applied.

There are seven things to be observed in chicken rearing :

1. Feed so that there is not a kernel of corn or grain of soft food left ; if so, it soon becomes sour, and not only turns the chickens against it but harbours the rats.
2. A good supply of green food.
3. Always see that they have a good supply of sharp grit to digest their food, if not, they cannot thrive for long.
4. The dust bath is very essential.
5. See that they have plenty of ventilation in the sleeping house and are not too thick on the ground
6. Keep them scrupulously clean, especially as chickens.
7. Lastly, when they are allowed water it should be given fresh.

If these seven rules are carried out, success is sure to follow more or less. Any green food will do for chickens, if cut fine so that there are no large pieces, as sometimes when one of these is swallowed it causes a stoppage between the crop and gizzard, usually at the mouth of the latter, if the green food is of a tough nature, such as withered grass or dead

cabbage leaves. When there are hairs or pieces of soft wood adhering to the soft food the chickens are apt to swallow them. Anything of this sort blocks the passage to the gizzard entirely. I have had many sent to me for examination, and these simple things have been the cause of death.

I have tried experiments for several years in rearing chickens without giving them water, and in many cases I have been very successful. There is more trouble attached to this than giving them water, as most of the grain has to be boiled. It answers well where table birds only are wanted, as chickens grow faster if all the corn is boiled and given warm, but if all stock birds were reared in this way they would in time become weak in their digestive organs. Another method of rearing chickens in the cold and windy days of the winter and early spring is as follows: a small run should be made either three or five feet long, the width same as the coop in which the hen or chickens are placed. There should be a seven inch board each side, and one at the end, on which a small frame, covered with small mesh wire ($\frac{1}{2}$ in. mesh) should be fastened, so as to cover in the run so that sparrows and other birds cannot get through at the food. The two sides and end keeps the wind away from the young chickens, and the wire at the top lets the air in without draught. In this way young chickens can be reared successfully in open fields all through the winter. Thousands of chickens are ruined through people attempting to bring them up in out-buildings such as a pig sty, empty stable, or a barn or loft. The latter treatment is almost sure to bring on cramp sooner or later, and after they have

been kept from the fresh air for a time they become very tender and susceptible to cold if put outside, and many get congested lungs and cramp in legs and toes as a consequence. In 1895, through January, February, and early March, when it was coldest—there being from 15 to 40 degrees of frost, and snow upon the ground—my Black and Buff Orpington chickens were out in the open in a bare open coop and the wire runs with boards round such as I have mentioned, and they grew fast and did well, laying at four-and-a-half months old.



PURE OR DISTINCT VARIETIES.

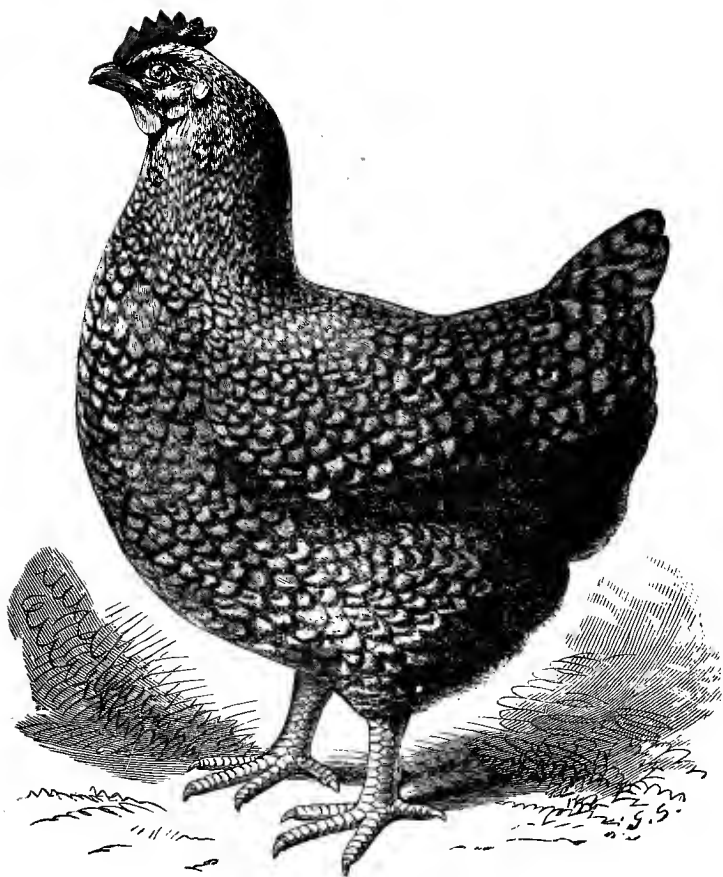
Plymouth Rocks—Minorcas—Leghorns—Buff Leghorns—Dorkings—
Creve Cœurs—Hamburghs—Scotch Greys—Polands—Game—Indian
Game—Houdans—Cochins—Wyandottes—Golden Wyandottes—
Langshans—Brahmas—Redcaps—Andalusians—Orpingtons:
Black, Rose and Single Comb, and White.

IT is my intention to give in this chapter, outlines merely of the pure or distinct breeds, just so that an amateur may distinguish one breed from another. To describe all the points of every pure breed, mating birds for exhibition, &c., would be impossible, as space in this small handbook could not be allowed. I have just stated what are the best breeds to keep under different circumstances. The Black and Buff Orpingtons, and Golden Wyandotte, and Buff Leghorn, and the Black Minorca are the most popular varieties at the present time. Buff Plymouth Rock and Buff Wyandotte are both very much sought after, both varieties being good layers. There is not so much difference in the breed of birds as regards their laying qualities, but the difference lies more in the strain, as there are good and bad layers in every breed, and it is only by very careful selection that good laying strains are worked up. No pure-bred pullet

ought to lay before she is six months old. Before this age I always endeavour to keep them back if I see them reddening up too early, as nature must have time to do her work. If they come on much before that age their eggs are very small. If they get on too fast they should not have any flesh food, or anything to stimulate, and they should be changed from one run to another, if possible. This will put them back. On the other hand, if they do not come on till very late they require a stimulant, for at times nature requires assistance.

PLYMOUTH ROCKS.

Plymouth Rocks have been a very popular breed, but during the last few years they have been somewhat superseded by Orpingtons and Wyandottes, though they are still very largely kept. I will point out a few of their good qualities, and also what some people call their bad ones. In the first place they are very hardy, inasmuch as they will stand confinement, and the cold and damp does not affect them. They are good winter layers if fed and treated properly. They have a tendency to fatness, and to avoid this they should have plenty of scratching exercise and not too much maize. They also come broody when the warm weather sets in; but they are very easily checked if treated as described in paragraph on broody coop. If they are required for sitting they make splendid sitters and good mothers. As they have only four toes on each foot and are very strong in the wing, they cover the eggs and chickens well. They also lay a brown egg. In this they vary a little, some having a very brown shell, and others a pale brown. Sometimes purchasers are a little



PLYMOUTH ROCK HEN,

disappointed as the eggs vary in colour. This makes no difference in the quality of the breed ; but at the same time most people like to get them as brown as possible. The eggs are not large for the size of the birds, though some lay much larger than others. Taking them all round they are about the size of the Brahma. They are eggs that will sell either in town or country. When set, the eggs of Plymouth Rocks hatch out well ; better than the Cochin or Brahma. The chickens do not appear to grow so fast the first two months as many other breeds do, especially the cockerels (as they do not feather so quickly as the pullets). After that age they fill out very fast. A great many of the cockerels come very light in colour, and are useless for breeding pure birds. Those that are rejected do very well for crossing with any other breed. There is one disadvantage in breeding Plymouth Rocks (if it may be called so)—many of the pullets come black in plumage, and their legs are usually very dark. The only way they can be detected from a clean-legged Langshan is that they have yellow feet, especially the underneath part and between the toes. These usually make the largest pullets and are good layers. There are some breeders who mate a very light cock with yellow legs and beak with black hens, to produce dark-coloured cockerels with good evenly-marked plumage all through. It is not well to breed from a dark-coloured cockerel when the pullets or hens are dark ; if so, many of the pullets will come black. This breed requires great care in mating up ; if not the results are unsatisfactory.

It is not those who keep the best birds always breed the best fowls. The mating of them is the secret—that is,

when required for the show pen, or to realize a good price. There are a few little things to avoid, and others to cultivate. If fowls for the above purposes are required, first see that the cock has red face and ear-lobes; the latter should be free from streaks of white, comb evenly serrated and standing erect, yellow legs and beak (if possible), the former being the most important. The breast and shoulders should be broad, and the bird should have good carriage. The more evenly the cocks are marked the better. White feathers will appear in the tail, but this is one thing to avoid; but it is difficult to get them without a little white in the tail. It is not a matter of light or dark shade, but of even marking. The hen's comb should stand erect, and be firmly set to the head and evenly serrated. The plumage should be of two distinct colours; each feather should be marked with a very light slate; almost white, and a very dark slate. In those birds which are of a dark shade, the dark marking looks almost black, especially in the hens. When one feather is examined separately, it should be marked to the quill, one bar of light and then of dark. The last bar or spot of white should just show, and the tip of the feather should be edged with the dark shade. When they are evenly marked, it gives the birds the appearance of being beautifully spotted all over. The more evenly the hens are marked in this way the better. The light markings must not run into the dark. The hackles (the neck feathers) are marked finely, but should be the same shade. The cock's breast should be the same colour as the hen's body, and the hackles and saddle are of a much finer marking. When the birds are of a fine colour, the markings should be

of a bright grey, showing distinctly the light and dark shades. Care should be taken in mating Plymouth Rocks. If not, there are many of the cockerels come very light, and *vice versa*, and the pullets black. If the hens are of a dark shade, a light cock, with yellow legs and beak, should be mated. This is the colour that usually produces the best marked pullets, but the cockerels from this mating are very light. It is very difficult to produce good pullets and cockerels from the same pen, unless there are a good number of stock birds to pick from. If good cockerels are required, a medium-coloured cock may be mated with dark hens. If mated in this way, a few black pullets must be expected. If the hens are of a light shade, a dark cock may be mated with them. Great care should be taken in mating this breed. A light coloured cock, with bright yellow legs and beak, will produce the best marked pullets, and a dark-shade cock the best coloured cockerels. When chickens of this breed are brought up under trees or shade, their plumage keeps a much brighter colour, as the sun tans them very much. In the summer months Plymouth Rock hens usually lose the yellow cast from their legs—in fact, some become quite white, especially if allowed to sit. Their legs become yellow again when they change their feathers, but not such a deep colour as when pullets. I do not mind a Rock hen having pale legs if I know the blood is right. This is not always a point to go by, as there are many half-bred Rocks which have much brighter legs than the pure ones. This is one reason why the purchasers of this breed ought to be careful as to where they procure the stock.

If Plymouth Rocks are only required for table and eggs these points may be lost sight of, and birds with short legs and an intelligent-looking head sought after. I like to introduce fresh blood every year, when eggs only are required, as it always pays in the end. The chickens are much stronger, pullets lay earlier, and the cockerels fledge much faster. They usually commence laying when about six or seven months old. It depends upon how they are attended to when young, and whether they are bred from a good laying strain. I have known them lay 60 eggs before they were eight months old. This is an exception, and not the rule. I had one hen which laid over ten months out of twelve. The pullets bred from this hen laid when five months old. The cockerels were very short in the legs and broad in breast.

They are heavy birds and stand confinement well, do not show the dirt, lay a brown egg, are very hardy, with no feathers on the leg, and stand the cold weather well. I prefer them to the Cochin, as they are much more active, and better table fowls. I breed from a large number of them every year, and have from eight to ten strains of them unrelated. Where table fowls are required, this breed ought to be kept, especially if cross-breds are kept. They improve them very much. They can easily be bred with white legs and skins, if these are preferred. The plumage of this breed fades very much when exposed to light, and especially if not sheltered from the sun. Some shades fade more than others. The dark markings, which some people call black, fade and turn brown, especially in the cocks. It can be noticed more particularly on the top of the back. It is well

to avoid this as much as possible. Sometimes, when they are a rusty colour before the moult, their new plumage will come quite a distinct colour, fit for exhibition. They are good birds for a town, as they do not show the dirt. The chickens can be distinguished from other breeds. When all hatched out together, they are very dark on back—this part may be called black—and light colour underneath. The mark of distinction is at the back of the head ; it is a small grey spot. The legs and beak are usually very yellow. They do not show the markings on their plumage until their feathers grow. One vigorous cock may run with nine hens, and almost every egg will be fertile.

MINORCAS.

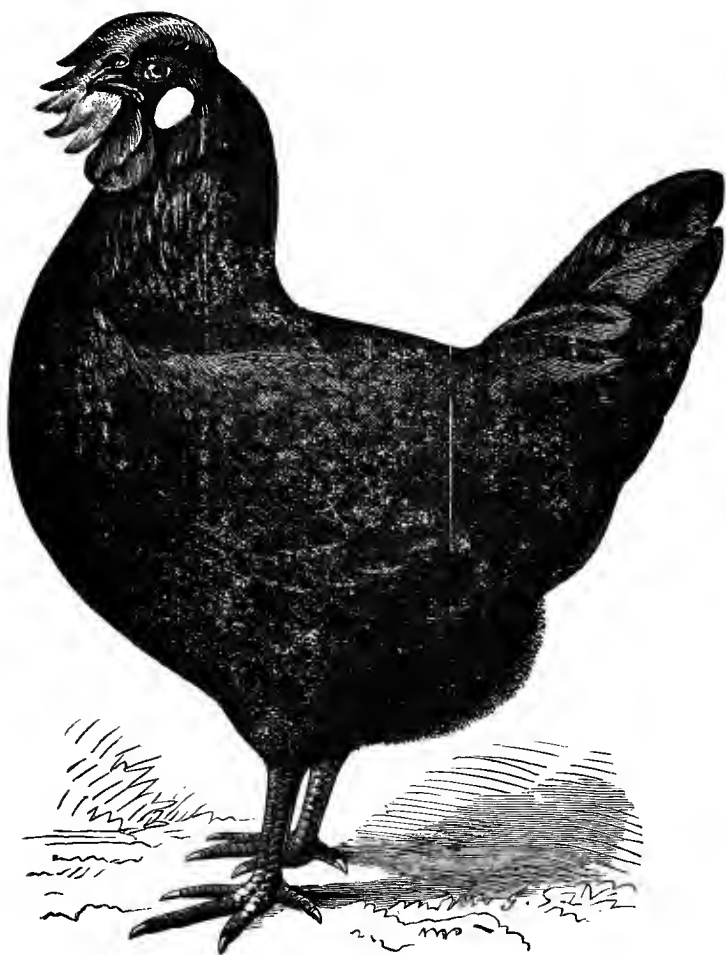
Minorcas are the most popular breed of the non-sitting variety in England. There are more of them bred and kept than any other non-sitting breed. They are excellent for confined places, and they can now be found in almost every town in England and in many country places, even on farms. I have tried many experiments with them these last seven years, both in cold and sheltered places and on different soils ; I have reared them and not put them in a house or shed from the time they were hatched until they laid ; I have tried them against my Houdans, and they surpassed them for laying purposes altogether. As a rule, they have laid from a month to six weeks earlier than the Houdan, all hatched at the same time and brought up together. This is the only way to test which really are the best fowls, so that they all have the same treatment.

The eggs of the Minorcas are very fine, indeed they are among the breeds that lay the very largest eggs; some strains of Houdans lay as large, but they are very scarce; also the Creve Cœur, Spanish, and La Fleche lay large eggs. I find all breeds that are accustomed to lay large eggs differ very much; the reason often is that they lay at an earlier age.

A pullet that commences to lay at from four to five months old will not lay such a large egg as one that does not commence until she is six or seven months. Although they lay white eggs they are very saleable both in town and country on account of the size. They are without exception one of the best non-sitting breeds to keep if large eggs are required, as there are so many thousands who want eggs and do not care whether they are good table fowls or not.

The Minorca is not considered a good table fowl by the public as a rule, and yet they eat very much like a turkey, that is in flavour and colour of flesh, and who is it that is not fond of turkeys? They have remarkably white flesh, nothing can be whiter as a table fowl; they may not be quite so juicy as a Dorking, but the flavour is quite equal. If care is taken they may be bred to a large fowl, and they are being bred much larger these last few years than they used to be. Where they have not been bred for size, the ordinary weight is from $4\frac{1}{2}$ to 5 lbs. at six or seven months old. The cockerels are much larger, and they would not disappoint any nobleman at the dinner table.

They ought to be kept more among all classes of breeders. I breed hundreds of them every year, as they are not only good in their pure state, but make excellent



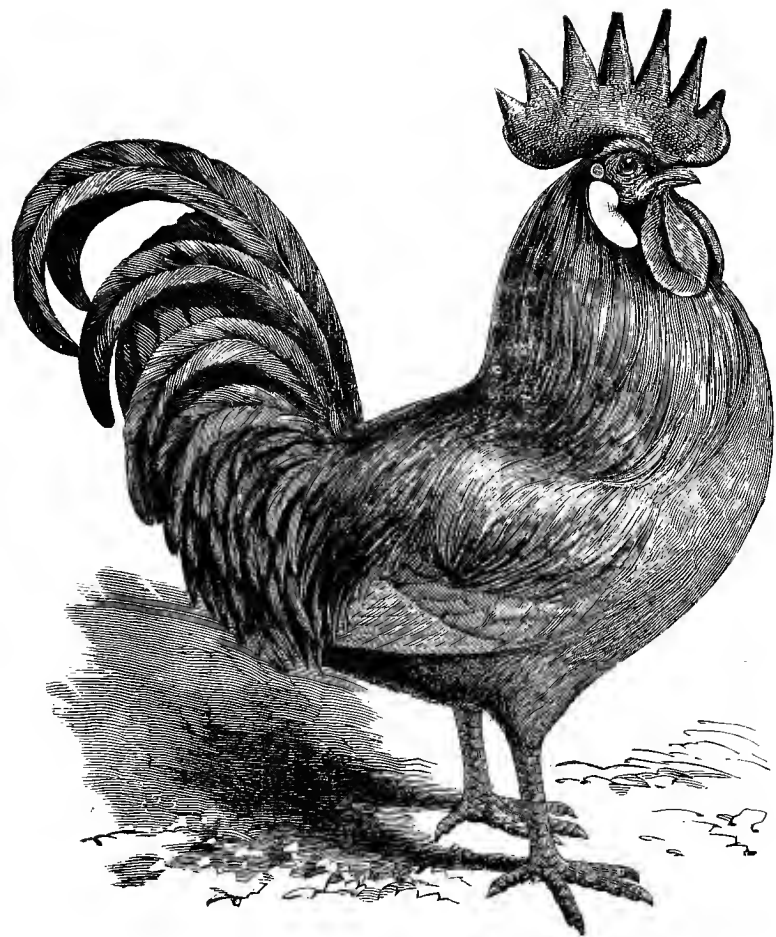
BLACK MINORCA PULLET.

layers when crossed with any other breed. The eggs from the Minorca hatch out well; cockerels fledge fairly, and pullets fledge very quickly, and are very strong, healthy, and easy to rear. They are a very active fowl, and scratch well for a living when they have their liberty, and yet when penned up they are quite contented. The plumage of them is very nice; they are a black fowl, and have a splendid gloss on their plumage, especially the cocks. They have very large single combs. The hens' fall over on one side, and when bred for the show pen are very long, and should be evenly serrated, the serrations should be very wide and long, the cocks' combs should stand erect, and be evenly serrated. When required for exhibition they ought to carry their tails well out, that is to say, not too upright; if so, they are called squirrel-tailed. This is considered a fault in the show pen. They should have dark legs, not blue, like those of the Spanish; four toes on each foot, well spread out from each other; white ear-lobes, free from red spots. The cock should answer to this description in face, ear-lobes, and legs, but the combs should stand very erect; the straighter they are the better; and the ear lobes much larger than those of the hens, almond shape, not round, and should be free from wrinkles as much as possible, and as soft as a kid glove. This breed, like all others that have white ear-lobes and large combs, wants preparing for the show pen (refer to chapter on that subject).

Sometimes a cockerel will be perfect in every point but his comb, and it will hang over on one side, as it is very fine, and has not strength in itself to stand up; of course, he will not do for the show pen. Such birds are usually

killed, because the owner thinks they are no good. This is a great mistake on the part of many breeders. It is quite a common occurrence to hear breeders say they are the finest birds of the whole number that have been bred by them, and yet no good because the comb is over. These cockerels make the best pullet-breeders. They produce birds with very fine combs, just those that win in the show pen. They look quite different from pullets that have been bred from a cock that has a good erect set comb, as many of the pullets bred from the last-mentioned cockerel have heavy, thick combs—these are sometimes called fleshy combs. They are too strong to fall over on one side of the face, so that makes a great part of the comb come too far over the wrong side of the face, or, rather, come both sides of it. This is a fault in exhibition fowls.

If Minorcas are not required for exhibition, the comb is no detriment to the cockerels when it hangs over a little on one side, or a streak of white in the face. These little defects are nothing when the fowls are only required for laying purposes. The chickens of this breed when hatched are white underneath and black on the upper part. When the feathers begin to grow the black covers the white. Sometimes white feathers remain in them for three months, but they usually shed them before that time. I have not treated upon the white Minorcas, as their points are the same, only their plumage is white instead of black. They ought not to have a coloured feather of any kind. The comb, wattles, face, and ear-lobes should be just the same and the legs white. I like black much the best. An active Minorca cock can run with from seven to ten hens of the



BROWN LEGHORN COCK.

same breed. Twelve to fifteen are not too many when they have a large range.

LEGHORNS.

Much has been said in favour of this breed the last six years, both as layers and hardy birds. They cannot be spoken too highly of, although they are small. There is not much of them if required for table; their skin is also rather yellow, and another drawback is they lay white eggs; nevertheless their good qualities counteract their failings. In the first place they are very hardy and stand confinement well; they even thrive in the back yards of towns, and lay all the winter through if properly housed and fed. They are easily reared as chickens, they fledge fast, and mature early. They commence to lay at from five to six months old, although the former age is too early. If they lay under five months old they usually commence shedding their feathers like old hens, but they get over it quickly, and soon come on to lay again. Leghorn chickens may be hatched out from January to September.

They are a beautifully-shaped bird, and often take the eye in preference to the larger breeds, as they are very active, and when allowed their liberty they range a long way from home, but do not lay away, as many other breeds do, if they have good accommodation in their roosting-house.

There are six varieties of this breed—brown, white, black, buff, pile, and duckwing. I only recommend the three varieties—viz., brown, white, and buff, as I have found them by far the best. I have found the brown very good layers, but the white are, if anything, a trifle better; in fact, I have found them stand my cold place as well as any other

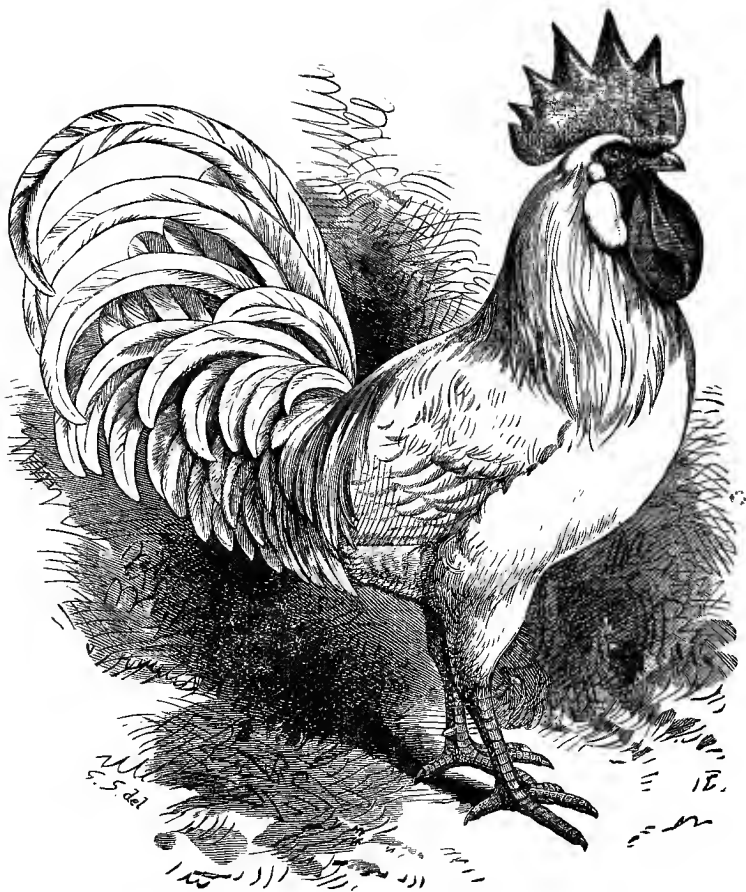
pure breed. The white lay a rather larger egg than the brown, and the hens are a little bigger. The latter look rather the best in a confined run, as they do not show the dirt. They stand confinement equal to the white. All varieties will do this if necessary. I do not recommend white Leghorns to be kept in thickly populated towns or manufacturing districts, as the plumage becomes very dirty when kept in close confinement. They are excellent layers.

The cocks of the brown are very handsome, much the colour of a black-breasted red Game cock. The hen's hackle feathers should be well marked, brown, edged with black. These are the hens to breed from if good bred fowls are required.

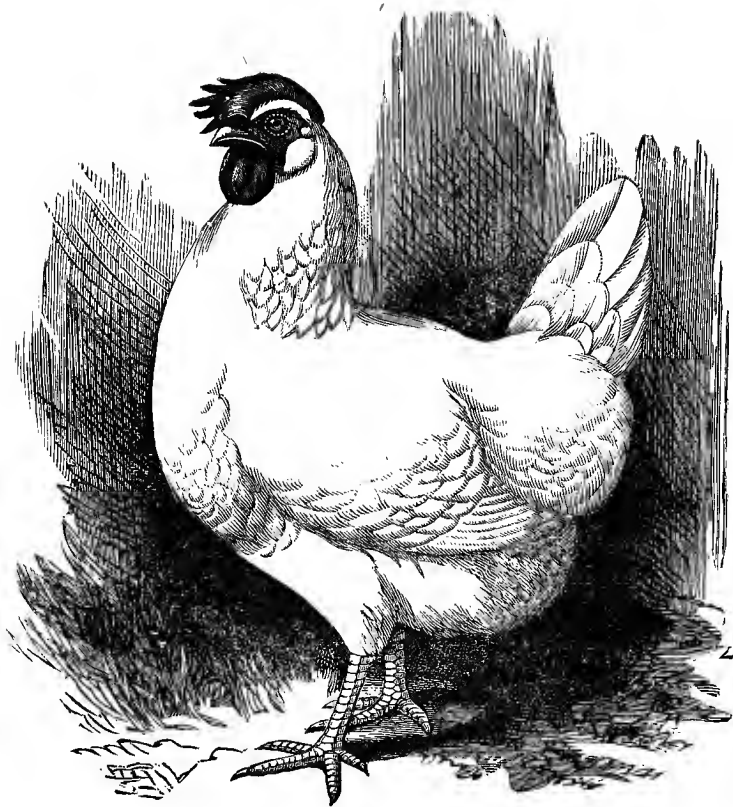
The egg table of the Leghorn varies very much, like most other breeds. Sometimes they will lay as many as 250 eggs per bird in a year, even more occasionally, while some kept under the same conditions will not lay more than 120 or 140. When I meet with a good laying pen of birds I always endeavour to keep them up, or even a single fowl, if a good layer. I encourage the owner to breed from her, or buy her myself.

Leghorn eggs are usually very fertile, and hatch out well. One cock may run with from eight to twelve hens (six or eight in a confined run) and fifteen hens are not too many if they have an open run (grass field). They are non-sitters. They give good value for their food. This breed ought to be more encouraged in our country. The eggs are about as large as those of the Dorking.

I can recommend Leghorns as the best breed to keep if only eggs are required for home consumption, either in



WHITE LEGHORN COCK.



WHITE LEGHORN PULLET.

confinement or in an open range. The white, brown, and buff varieties are my favourites. These varieties keep free from disease more than any birds I ever kept. Their eggs are not quite so large as the Black Minorcas', but the combs do not get cut so quickly with the frost and cold winds as the Minorcas' do.

Leghorns are still very popular; their laying qualities recommend them wherever they go.

Small sprightly birds they must always be, although greatly improved in size in the new varieties. The great need of the poultry world to-day is birds that combine laying and table qualities, and, while holding their own as layers, as table birds they are eclipsed by the newer varieties that are so superior in this respect, and, as the tendency is to concentrate, birds combining qualities that are only found singly or in part in other varieties, must, of necessity, come rapidly to the front, as is the case at the present time in regard to new kinds that have been introduced.

BUFF LEGHORNS.

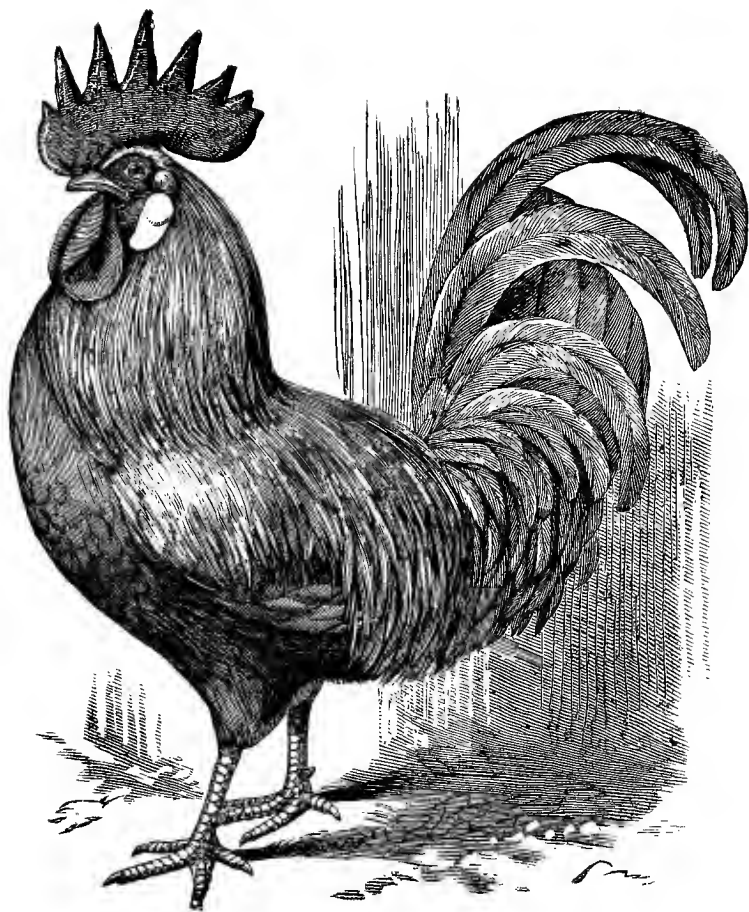
Buff Leghorns have become very popular during the past few years. They are a most lovely colour; a buff bird always takes the eye of the public, but it is difficult to breed them all true to colour. At present many of them come a very pale buff and not the nice deep colour they should be. They are marvellous layers and their eggs are about the size of either of the other varieties. There is a great demand both for eggs and birds, good-bred fowls of this variety will realize much higher prices than any of the

others, as they are rather difficult to breed for exhibition. The tails of the male birds are the most difficult to get right, as most of them come quite white, or the centre of the feather is white while the edge is brown. The chickens are quite as hardy as the brown and white varieties. There is a great demand for this breed for crossing purposes.

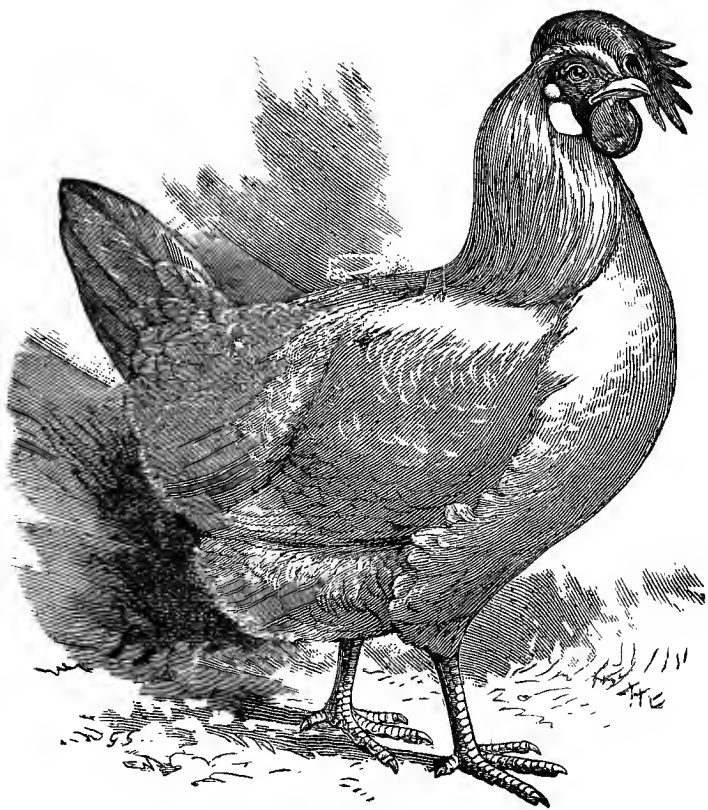
The head points of all classes of Leghorn hens should be single combs, lying over on one side, evenly serrated. In the buff and white the beak should be yellow, but in the brown rather a dark horn colour. Red face and white earlobes in all varieties. The tail should be carried rather high, and the birds should stand rather short on the legs and have a small compact body. The head points of the male birds are exactly the same as those of the hens, only the combs are larger, also standing erect, and the serrates wider apart. The plumage of the white variety should be pure white throughout, and that of the brown much the same colour as the black breasted red game. The buff variety should of course be a beautiful buff colour right throughout, but good specimens in the male bird are few and far between. All classes should have yellow legs and four toes on each foot.

BLACK LEGHORNS.

Black Leghorns have the same head points, with yellow legs, but with black plumage throughout. Some people prefer them to any other variety of Leghorns, but their legs are more liable to become dark, or spotted, instead of a bright yellow.



BUFF LEGHORN COCK.



BUFF LEGHORN HEN.

CREVE CŒURS.

The style of this breed is much the same as that of Houdans, but the colour is different, Creves being quite black, and they are also a trifle larger birds, and lay about the same sized eggs as Houdans and about the same number.

The cocks should weigh from 7 to 8 lbs., when fully developed, and have a large comb divided in the middle like two horns; the wattles are long and the top-knot ought to be large, as also the whiskers and bib. The hens are non-sitters and good layers; they have top-knots, etc., the same as the cock, but the combs and wattles are much smaller. The legs are blue with four claws on each.

Creve Cœurs are not much known in this country, and where they are known are generally preferred for cooking purposes, as they make fine table birds.

DORKINGS.

There are four varieties of this breed, viz., the coloured, silver-grey, cuckoo, and white, but the latter is very little known and less appreciated.

All four varieties resemble each other in having deep, square bodies, with broad breasts and short white legs, with five claws on each foot. The comb should be single and evenly serrated in the coloured and silver-grey, while the white and cuckoo should have double or rose combs.

The coloured or dark Dorkings are very large birds, the cocks weighing from 8½ to 11 lbs. and the hens about 7 or 8 lbs. The cock's breast and tail should be black, the hackle and saddle feathers being grey and black; the upper

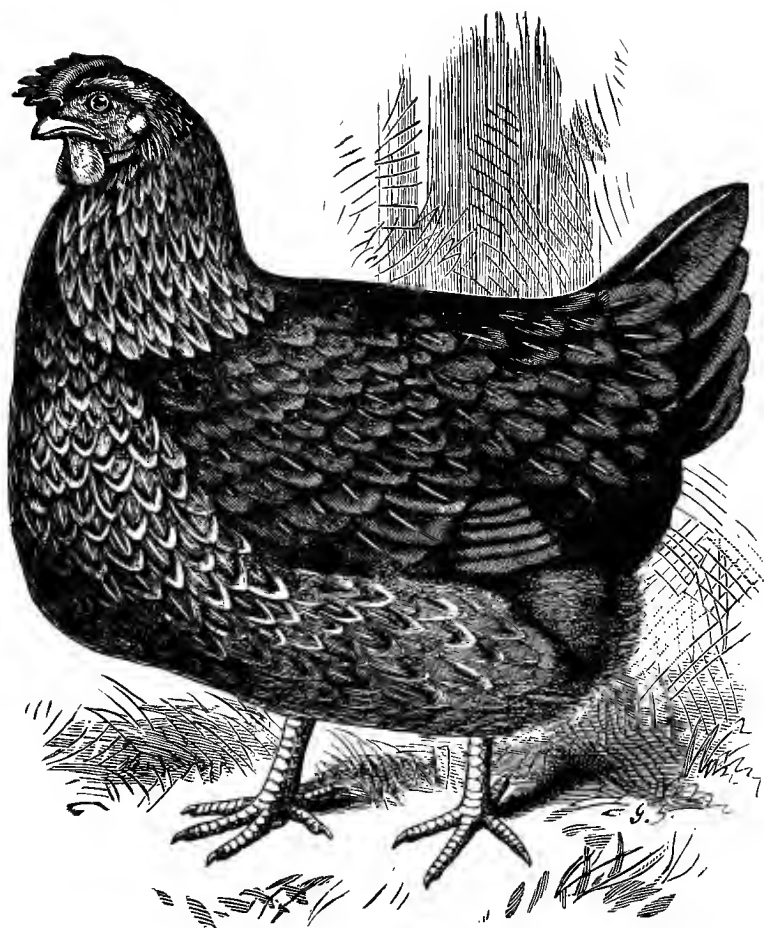
and lower part of the wing is greyish white, while the middle bar should be black.

The feathers on the top part of the hen's back should be very dark, each feather showing a light brown stripe in the centre. The breast is of a reddish brown shade, each feather being just tipped with black at the end. The tail should be black and the hackle feathers striped grey and black.

The silver-grey resemble the coloured in shape, but are not quite so large. The cock's plumage is also much the same as that of the coloured, but the hackles, saddle and shoulder are whiter or more of a silvery colour; the tail and breast black. The hen's back should be of a delicate pale grey, the breast being of a light brown colour—rather paler than that of a robin—and the hackles striped white and black, appearing very bright. Both these varieties are very popular and grow increasingly so. Cuckoo Dorkings are smaller than the coloured, but are very handsome, each feather being a greyish-white, tipped with slate at the end. They are the least kept, as they are rather delicate on account of it being difficult to procure fresh blood. They are often called speckled Dorkings. These resemble the Plymouth Rocks in colour very much.

White Dorkings are about the same size as the cuckoo variety, but rather longer in the leg, and they are also rather delicate unless they have a good open range.

As is generally known, Dorkings carry a great quantity of white meat, and as they are the best birds for table purposes as regards quality, they command the highest prices in the London markets.



COLOURED DORKING HEN,

They are not good layers in confinement, and most people find them delicate to bring up, although I have never found any difficulty in rearing them; but the chickens do better if they have a good open space with short grass to range over.

No fowls require the introduction of fresh blood more than Dorkings, and unless a change of blood is frequently brought in, it will be found that the eggs and chickens get smaller every year.

HAMBURGHES.

There are five varieties of this breed, viz, silver-pencilled, golden-pencilled, silver-spangled, golden-spangled, and black.

With the exception of black, which only differs in being rather larger, all the varieties of Hamburgs resemble each other in having small white ear-lobes, rose combs ending in a point behind, and small, but somewhat plump bodies, with blue legs and four claws on each foot. They are also non-sitters.

In the silver-pencilled the hens are evenly pencilled nearly all over the body, the only part not marked being the hackle feathers, which are almost white. The cocks are nearly pure white, the exception being the tail, which is black, slightly edged with white, also the feathers on the lower part of the body between the end of the wings and the thighs, which are evenly pencilled, and some of the wing-feathers, which are slightly touched with black.

The golden-pencilled are marked in exactly the same way, but with rich brown colouring on the feathers in place of white.

In the silver-spangled variety the hen should be spangled on the breast, back, saddle, and thighs, the tail and wing flights being white with black spots on the ends ; the neck hackles should be striped black and white. The cock's breast is spangled and the hackles and tail white, each tail feather being tipped at the end with black ; back and wings grey and white, with a few dark feathers, the wing being marked with three distinct bars of black.

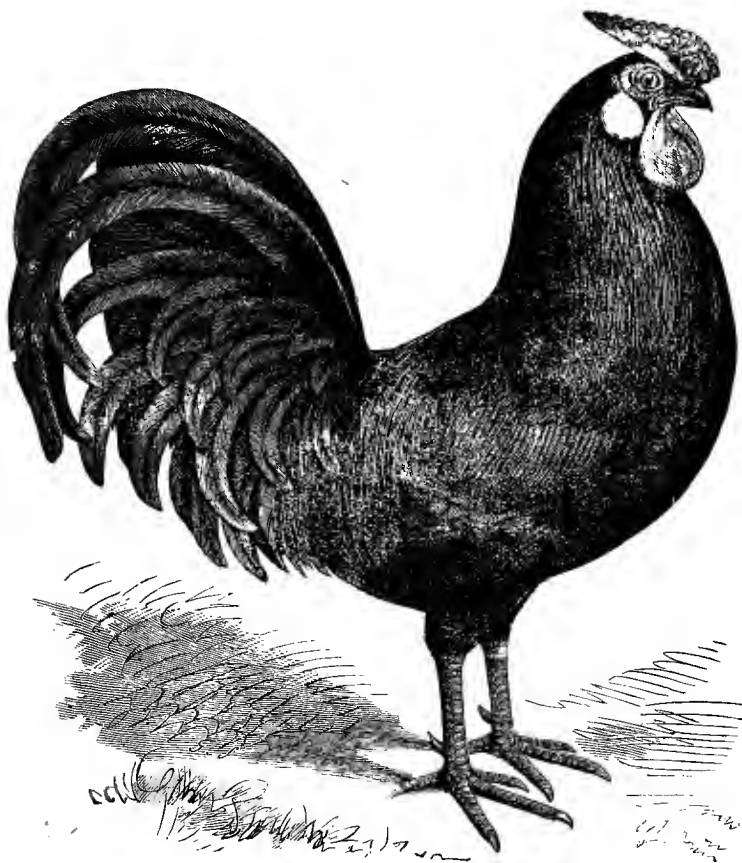
The golden-spangled are marked nearly in the same way, but the feathers are coloured rich brown instead of white, the cock's tail being pure black. They are often known as "Moonies," or pheasant birds, especially in the Midland counties.

The black have pure black feathers, which look quite a metallic green in the sun. They appear to have a slight touch of the Spanish build, from which breed they no doubt obtain the extra size.

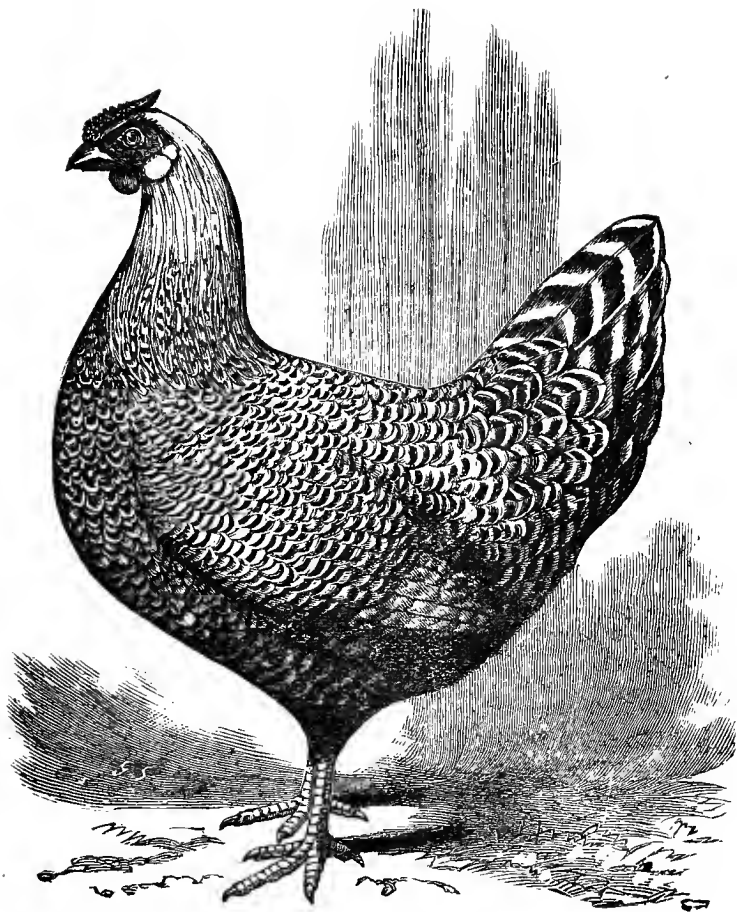
Hamburghs are well-known on account of their laying qualities. They lay medium-sized white eggs, which do not sell well for market. Although small they make fair table fowls, as they are plump and the flesh is white and tender.

They do best with a large range, but if shut up securely and kept clean they will thrive well in confinement.

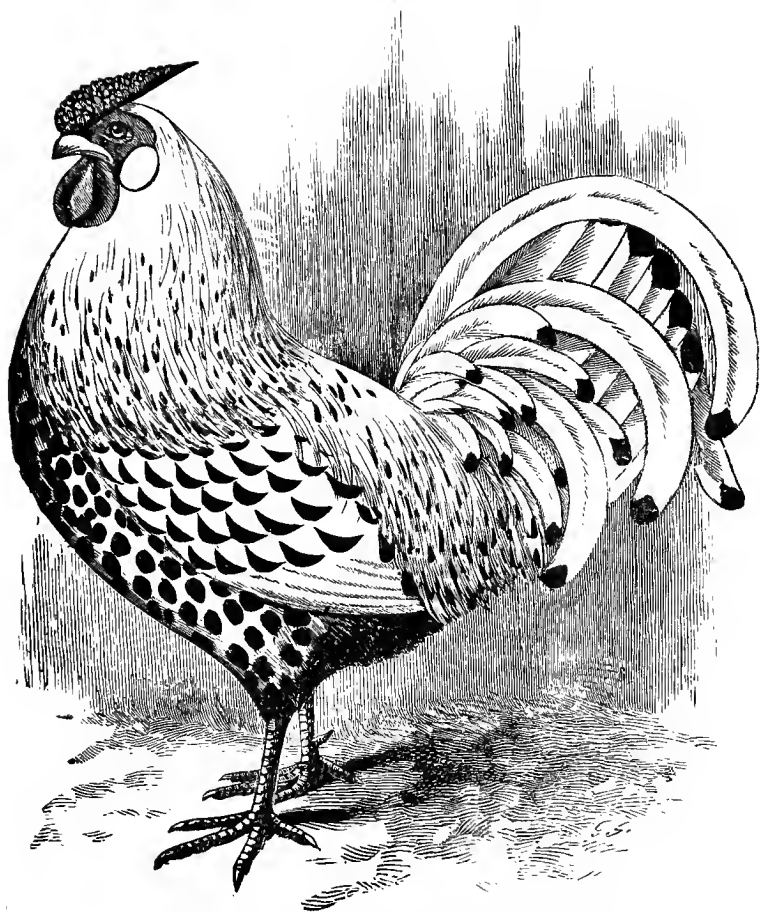
These fowls are kept largely in our country, and still retain their reputation as layers. I have tried them against the Leghorns the last three years, but I must give the Leghorn the preference for several reasons. Firstly, they are much hardier when exposed to the cold and wet ; secondly, they lay better in the winter months, laying larger eggs, which



BLACK HAMBURGH COCK.



GOLDEN SPANGLED HAMBURGH HEN.



SILVER SPANGLED HAMBURGH COCK.

make a better price than the Hamburgs ; thirdly, the chickens are much hardier, and can be reared considerably easier, being much less subject to colds in the winter months, that is, they do not feel the changes in the weather so much. Hamburg chickens ought not to be brought up with other breeds ; if they are they do not thrive so well. They also ought to be kept from the damp grass early in the morning, and if reared in confinement should be kept very clean.

SCOTCH GREYS.

This breed is very little known in England, although they are good useful fowls. In Scotland they are very popular, and are thought very much of. The colour is much the same as the Plymouth Rocks, but the markings are finer, and the dark markings of the feathers are of a lighter shade than the Rocks, and the lighter marking not so light. In well-bred Scotch Greys the markings are very even of two shades of grey, one light and the other dark, so that if one single feather is examined, it will be found that the bars of light and dark shades run right down to the stem of the feather. The markings are so distinct that many of our English breeders have crossed them with the Plymouth Rocks to get the even markings.

The Scotch Greys are very hardy, with fairly short white legs, broad in the breast, skin very white, and may be classed as a good table fowl. The chickens grow fast and are very hardy. A few of the cockerels are a little delicate, but this is where they have been in-bred too much. If bred from a good laying strain, the pullets will commence laying when from six to seven months old, and make good layers of fair

sized white eggs, although some of them will hatch out black. They stand confinement fairly well ; they are good sitters and mothers, and can be crossed with any other variety. If the owners of Scotch Greys wish to increase the number of eggs, and do not mind white shells, the best breeds to use for crossing are Houdan, Minorca, or Leghorn cocks, the first-named being best. When crossed with either of these breeds, they make excellent winter layers, and will produce from thirty to fifty eggs each more than in their pure state in twelve months, and also commence laying earlier. When a Leghorn cock is used many of the pullets commence when five months old. When the Houdan cock is crossed the best table fowls are produced. When the Minorca cock is mated the eggs are a little larger than from the other crosses. When a white Leghorn cock is used most of the pullets come white. If the Houdan, most of them come black, with small top-knots. If the Minorca, sixteen out of twenty come black. The laying results from these crosses are marvellous. If table fowls for market are required, I recommend the Dorking cock to be crossed, as when this cross reaches the London markets, they are bought up at once, as their legs and skins are so very white. If brown eggs are required, I recommend an Orpington cock to be used. I breed a large number of this cross. If the birds are required for pheasant rearing, I prefer the black-breasted red Game cock to be mated with the Scotch Grey, as the pullets from this cross are hardy, good winter layers, and are excellent sitters and mothers. If the two latter crosses were tried in the North of Scotland their egg list would be doubled in the winter. I have had pullets of the

Scotch Grey cross commence to lay at five months old. If this breed were only better known in England they would be kept largely, they are a favourite fowl in Scotland.

GAME.

All varieties of this breed resemble each other in having a sharp strong head and neck, long vigorous legs with four claws on each foot, and broad firm breasts, and the general appearance of the bird should be firm and hard, caused by the feathers being very short and strong, lying close to the body. The comb is single and of a moderate size, standing erect in both sexes. The cock's comb and wattles are often cut off or "dubbed" when the bird is from five to seven months old, as they are then less liable to injure themselves should they get fighting.

There are so many different varieties of Game that to describe all would take too much space, but the most common variety is the black-breasted red, the cock of which should have a black breast and tail, the lower part of the body should also be black; the hackle and saddle feathers are of a rich brown-red colour, the upper part of the wing is of a deep red with black edging, the centre part being black and at the end a reddish brown, something the same colour as the hackles. The hen's back and wings should be brown, and the under part of the body rather lighter. The hackles are striped black and brown. I find this variety are the best layers, and the most popular.

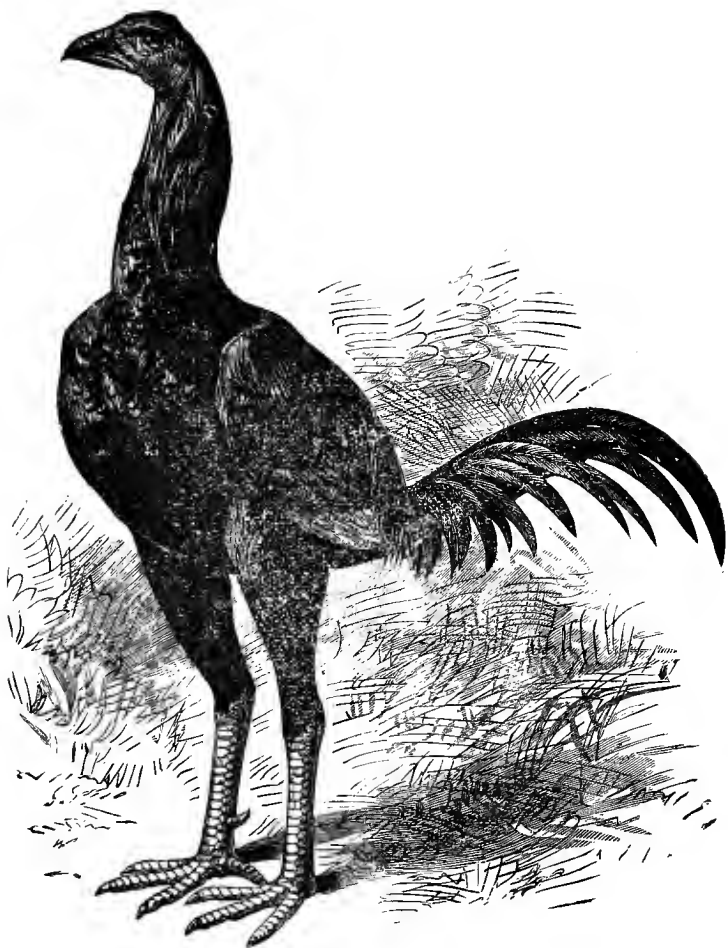
Game are fairly good fowls to keep when they have a good range, as they search well for their own living and are very hardy. The hens are poor layers in confinement

unless they are bred from a good laying strain, but lay fairly well if they have a good range, and they are also good sitters and mothers, as they will defend their brood against anything, but they are spiteful to chickens not their own.

They make much better table fowls than one would expect, as they are very plump and fit to kill any time, but I should not recommend this breed to anyone desirous of keeping fowls for profit unless they have a wood, or a grass field for them to run over, in which case they will practically take care of themselves.

INDIAN GAME.

This variety has been very popular the last few years in England, as table birds. They are more particularly used for crossing purposes to produce table birds. They are far better layers than the ordinary Game, and the colour of the egg is brown. The birds themselves are a beautiful mottled colour, and much the same as a pheasant. The legs are bright yellow, the plumage being of a mixture of very dark brown, almost black, and a lighter shade, giving the bird a beautiful pencilled appearance. They have a deeper cut of meat upon the breast than any other variety. This is what makes them so popular as table birds, and especially the cocks for crossing purposes. The feathers lie very close, like those of any other variety of Game. They should have a very strong beak and head, and the hens make good sitters and mothers. They do not have a single comb like that of the ordinary Game, but a pea, or treble comb, much like that of a Brahma, only in the male birds it is larger. Face and ear-lobes should be red, very



INDIAN GAME COCK.



INDIAN GAME HEN.

dark in the cocks, almost a dark brown. Those who breed for the market should never be without Indian Game blood in their yards.

COCHINS.

All varieties of this breed should have four claws on each foot, and the legs should be yellow, short, and feathered down to the end of middle toe, with a great deal of fluffy feathering on the thigh, which should meet the leg feathers so that there is no vacancy between. Comb single, rather short, and standing erect; breast appearing very broad, and the general attitude of the fowls rather leaning forward. The cocks ought to weigh from 7 lbs. to 11 lbs., and the hen from 6½ lbs. to 9 lbs.

The most common colours known are buff, white, and partridge, but black and cuckoo Cochins are frequently met with. I prefer the buff and partridge varieties, and I only keep those.

Buff differ in shade a great deal, some being of a pale lemon colour, and others much darker, while the cock's feathers are very glossy, being of a rich brown-red colour on the wings and back.

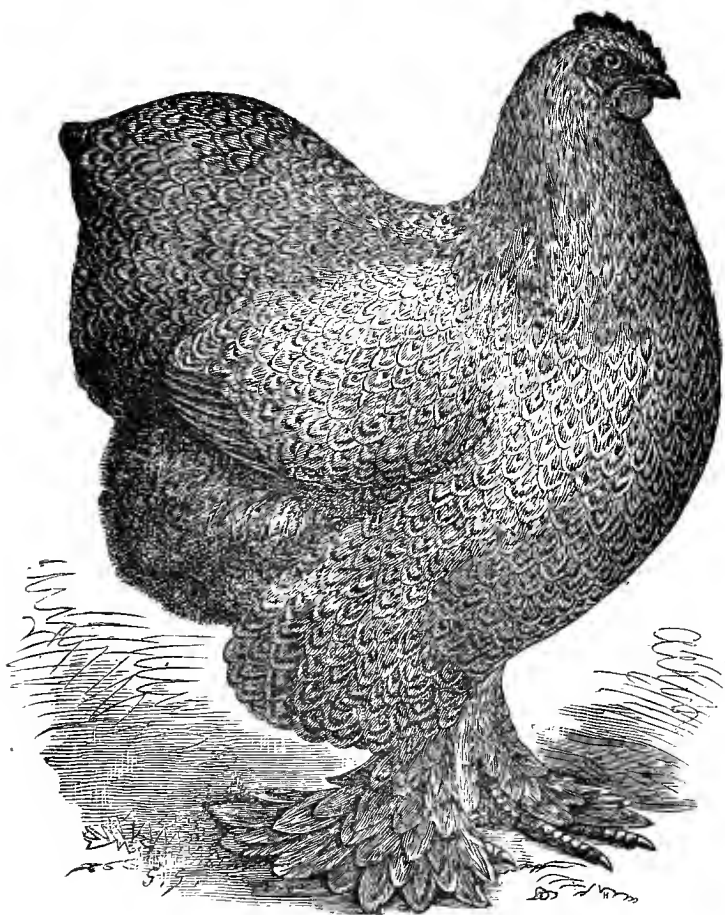
Partridge hens are pencilled, something like a partridge, but rather darker; the feathers on the body are pencilled; and those on the neck are black and brown, tinged delicately round the edges with light brown. The cock should have black feathers on the breast and under part of the body, and red on the wing and back.

Cochins are often disliked on account of their being such bad table fowls and so often wanting to sit; but, in spite of these failings, they are very good fowls to keep for anyone

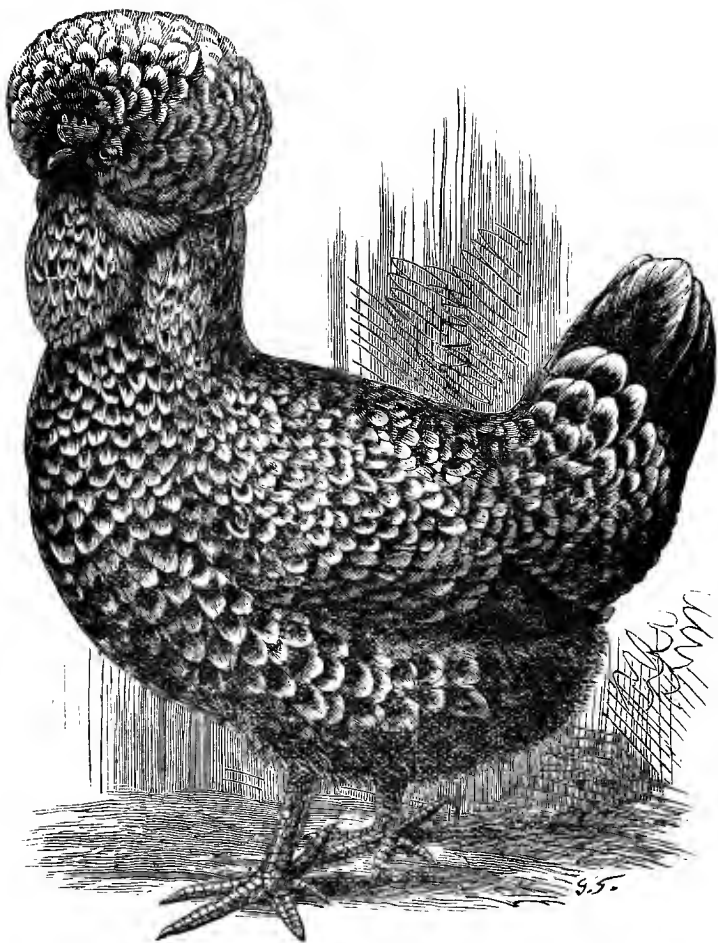
with only a small space, and that cold and damp, as they stand confinement well and are very hardy. I have known disease go through every breed in the poultry-yard with the exception of Cochins, and even Brahmas will take diseases that will not touch Cochins. As chickens, they are hardy, and may be hatched all through the winter, although they fledge very slowly. In breeding, care should be taken to select a young cock, hatched about May, as then they are more active and do not grow so large, and by breeding in this way, as many chickens may be hatched from two broods as would be obtained from four without taking this precaution.

The best varieties to keep in confinement are buff and partridge, but of the two I advise partridge, as they lay a month earlier than the buff, often laying when six or seven months old, while the buff are often eight months old before commencing. They are first-rate layers, and will lay well in winter, as their feathers being long and strong, they can stand any weather. They lay a good-sized egg, very rich in flavour, the white being thicker and more glutinous than any other fowls', except that of the Game, and the colour of the shell being quite brown they sell well, and command a good price in any market.

These birds are also very valuable for crossing, and may be crossed with any other fowls; but I recommend non-sitters, as they are so often broody, and many farmers who have crossed Cochins with Dorkings, to obtain good table birds, have been tormented with broody hens. Care should also be taken in selecting birds to cross with Cochins to choose those with short legs and plenty of breast-meat, or otherwise the half-bred birds will be very lanky.



PARTRIDGE COCHIN HEN.



HOUDAN HEN.

Cochins require careful feeding, as, when fed entirely on corn, they will only lay a few eggs, and then become broody, and, although they make good sitters and mothers, they are a nuisance when so often broody ; they are also very liable to fatty accumulation internally, which, of course, stops their laying, and often causes death by apoplexy. Cochins are condemned by some people, but they are favourites of mine.

HOUDANS.

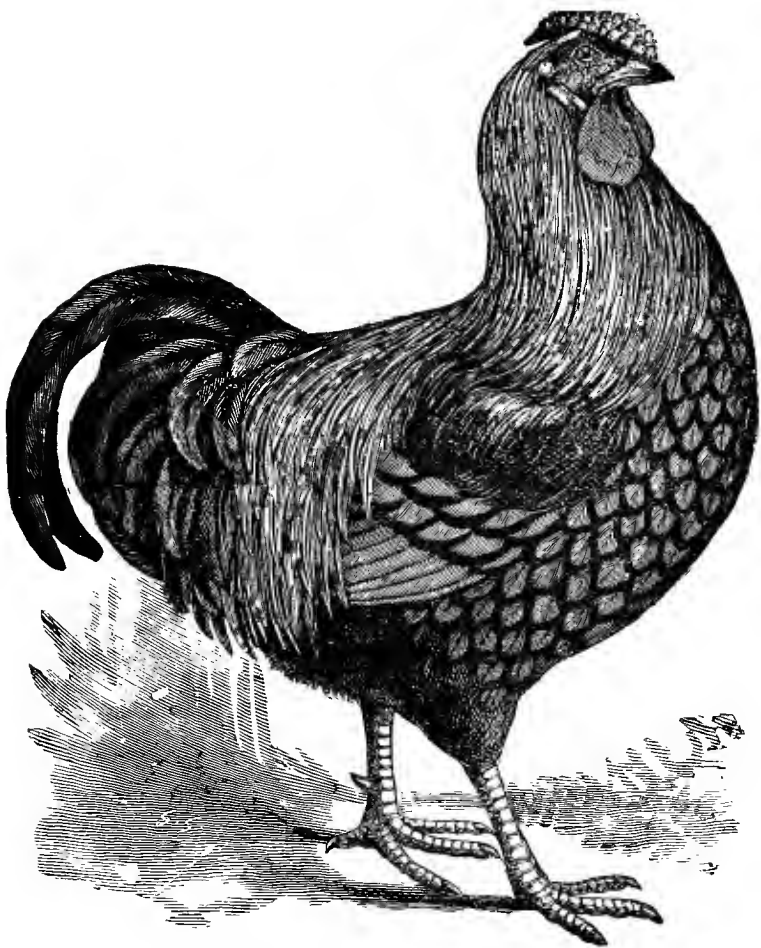
This breed is the most general of the French varieties known in this country, and holds about the same position in France as Dorkings do here. They are much the same shape as the Dorkings, and are first-rate table fowls, having small bones, short legs, and plenty of very white and rich meat on the breast. They are, however, much better layers than Dorkings, as they produce a large number of fine white eggs in the year, and stand confinement fairly well.

The hens are non-sitters, and should have black feathers, tipped with white, the markings being as regular as possible. The cocks weigh from 6 to 8½ lbs., when developed, and are the same colour as the hens on the breast, but darker on the back, with greenish black feathers in the tail. Both sexes have fair sized crests, with feathers round the ears and under the beak, known respectively as the "whiskers" and "bib." The cock has a large comb, opening in the middle, and often known as a leaf comb ; the hen's is the same shape, but much smaller. The legs are short and of a blue white colour, with a few white spots, and five claws on each foot.

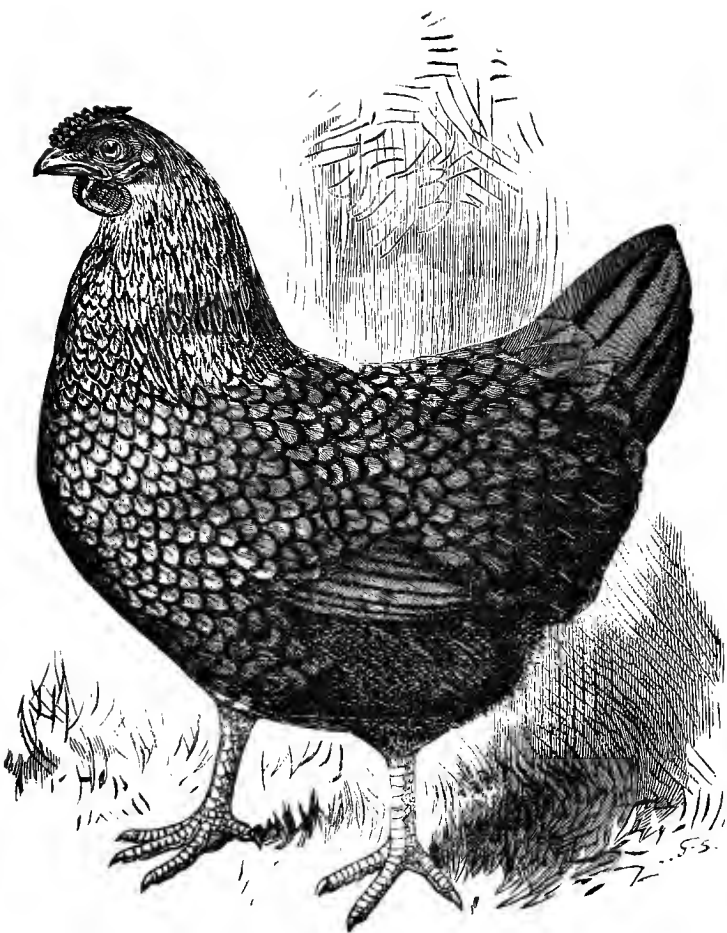
As will be seen by the above description, Houdans are very fine fowls to keep for crossing purposes, when a supply of eggs is wanted, and also of chickens for the table. I recommend the Houdan as far superior when crossed than in the pure state, and standing at the top of the tree as an all-round bird for crossing.

WYANDOTTES.

This is one of the breeds from America, which is very popular. There are three varieties, the silver, white and golden. Some praise the Wyandottes, while others are disgusted with them. I have found them excellent layers ; there are not many pure breeds to surpass them ; they may, indeed, be classed amongst our best layers. The eggs are brown and rather small—some would call them a medium size—and the fowls themselves are fairly hardy, will stand confinement well, and make fair table birds, as they are short and compact, and very full in the breast. This breed have yellow skins, which is not in their favour as table birds. The hens make good sitters and mothers, and will often lay in the coop before the chickens are three weeks old. If not required for sitting they are easily checked, two days in the broody coop often being sufficient. They will often commence to lay before the seven days are up. The hen should be laced all over, both breast and back with white and black. Both the cocks and hens should have rose combs, rather small, with a peak or spike over the back of the head, pointing downwards towards the neck ; face and ear-lobes are red. In most specimens the beak is a dark horn, streaked with yellow, but some good specimens have



GOLDEN WYANDOTTE COCK.



GOLDEN WYANDOTTE HEN.

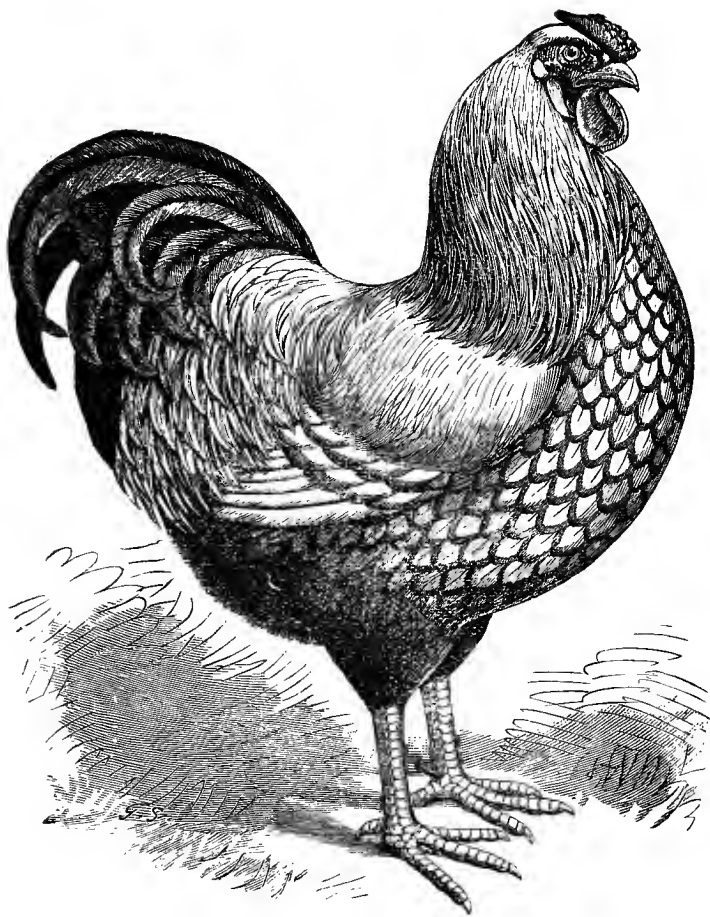
a perfectly yellow beak ; legs bright yellow, free from feathers, with four claws on each foot, well spread out from each other ; tails should be black. The cock is much the colour of a dark Brahma cock ; the saddle and hackles white, evenly striped with black. The back and wings are of a silvery white, slightly edged with black. Many of the cocks come with black breasts, but they should be laced on the breasts very evenly (some use the word "mottled" breast).

Wyandottes have become very popular these last few years, as they are good layers. When this breed is mated to produce exhibition birds, or for good marking in the pullets, a cock with a good mottled breast should be used, and a mixture of white in his fluff feathers. When this colour is selected, well-marked pullets may be expected. It is rather difficult to get a nice-shaped comb with a good peak at the back in the cocks, but it is an important point. Many of the pullets come very light on the breast.

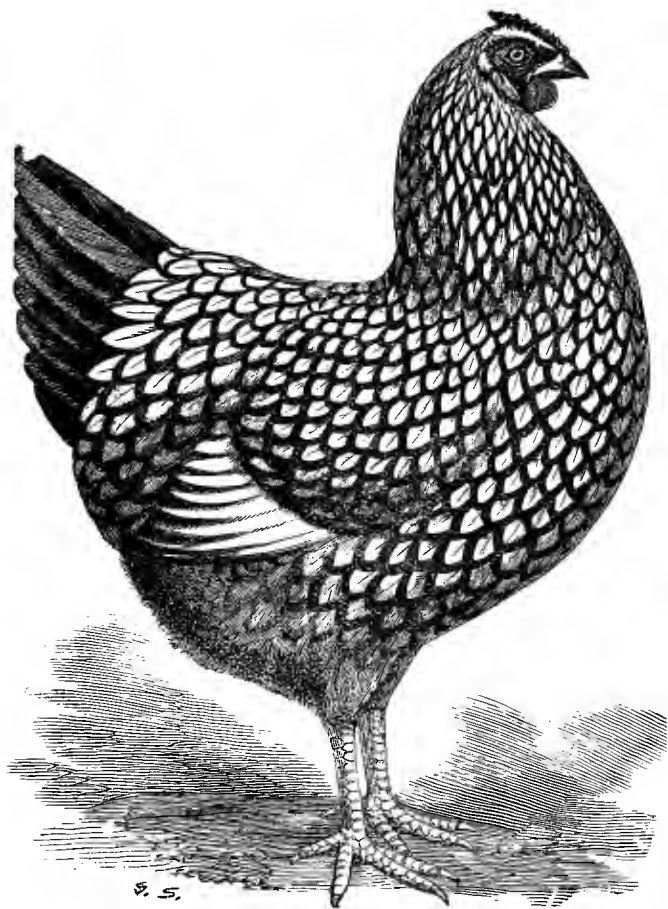
GOLDEN WYANDOTTES.

This is a fairly new variety that came in some years after the silver, and they are certainly very taking. I like them myself very much, as they are extraordinary winter layers of brown eggs, which are rather small. The colour of the bird is very striking, being black and brown laced. I go in for this variety largely. The skin of this variety is of a yellow cast, just the same as that of the silver, and as yet they cannot be bred very true to colour, that is to say we have to breed a good many before we get good specimens. They are one of the best winter layers ever produced. The

points are as follows:—Cock bird should have a rose comb, fitting nicely to the head with a peak at the back, pointing downwards; short curved beak of a dark horn or yellow colour; hazel eyes, red face and ear-lobes, wattles of a fair length, hackles very full, reaching well down in the shoulders. The colour of the feathers should be golden brown, edged with black. The hackles should not be too light in colour, and the saddle feathers should match them if possible. The shoulder or middle of the wing should be of a deep red colour, while the flights of the wings should be brown, edged with black, the underneath part of the wing is black, but should be well tucked under the saddle feathers, leading from the shoulder and not showing. At the end of the wing should be two rows of spangled brown and black. The breast laced, if possible right up to the throat, the centre of the feathers brown or buff, while the edge of the feathers is black, the tail should be black, not large, but a fair size; legs yellow, four toes on each foot, well spread out from each other. The hens or pullets should be evenly marked right throughout, but the hackles should be darker in proportion to the other part of the bird's body. Each feather should be brown in the centre, with a black edge all round. Each flight feather should be brown, edged with black, so that when the wing is closed it looks like little black marks on each feather. They should have a rose comb, which should be small and neat, fitting close to the head, red face, dark horn beak, striped with yellow. Broad in the breast, fairly short upon the legs, which should be yellow. Four toes on each foot.



SILVER WYANDOTTE COCK,



SILVER WYANDOTTE HEN.

BUFF WYANDOTTES.

Buff Wyandottes are of the same character and shape in every respect, only they have a buff body, but many of them come with a little black round their hackles. They are handsome birds and good winter layers.

WHITE WYANDOTTES.

There is also a white variety of Wyandottes, which are of the same character. They should be pure white and are a little bigger than either of the other varieties. I have kept them for some time, and like them exceedingly. It would be impossible for me to enter into their merits in this little work.

LANGSHANS.

Though this breed was once so much ridiculed, they are great favourites, and one of the leading varieties now they are better known. They are, indeed, a good all-round fowl for table, hardy to bring up, but should never be killed until they are from six to eight months old, as up to this time they are deficient in breast meat, but after that time they are like young turkeys, splendid layers of a brown egg, which is saleable everywhere, good birds to breed from, excellent sitters and mothers, stand confinement well, do not show the dirt, and are good foragers if they have their liberty. They have a beautiful green-black gloss on their plumage. A black fowl is much easier to breed from than any other colour. There is in the Langshan what is wanted, viz., laying and table qualities combined and also

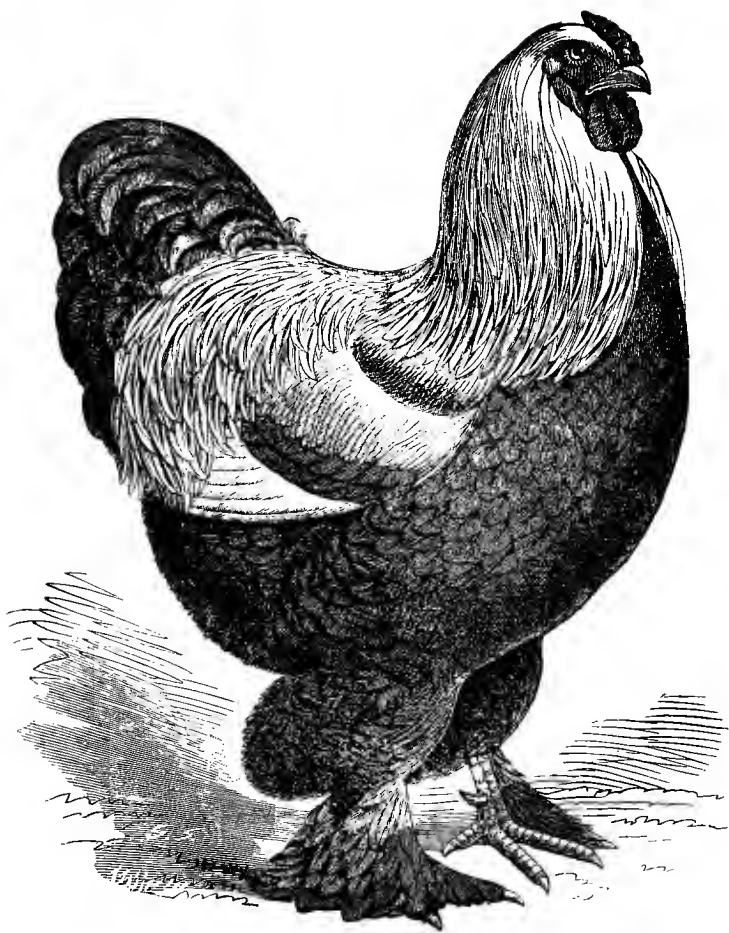
a handsome fowl. If breeders would only keep to the best layers, and make this a special point, it would be a grand thing.

The Langshan has much more tail than the Cochin, and has black legs slightly feathered down to the outside toe, not the middle one, which should be quite free from feathers. The thick fluff (vulture hocked) is a fault with them, especially the cocks. These are rather long in the leg, and should be broad in the chest, and should carry themselves very erect. Their combs should be evenly serrated and erect, the hens the same, but sometimes these latter incline to one side (this is not a serious fault), and should also have very red ear-lobes. They often have a few white feathers on their feet; this ought to be bred out, although they are often passed thus in the show-pen. They should have four toes on each foot. Sometimes the male bird throws a few red feathers on the neck and saddle.

If the cock is a very active bird he can run with from seven to nine hens in a confined run, or in a large range (grass field), ten or twelve hens, and as a rule, eleven eggs out of thirteen will be fertile.

If breeding for exhibition, run less hens, when for this purpose they are much heavier, and it is not well to run more than six to eight hens. The pullets fledge moderately well, the cockerels rather backward, but all are very hardy.

The Langshan chickens when hatched are black on the back and a whitish yellow on the underneath part and round the head. The first feathers sometimes come tipped with white, but these pass away in the first moult.



DARK BRAHMA COCK.

BRAHMAS.

There are two varieties of this breed—viz., the light and dark. Both are of a large size, and should have a broad substantial appearance. The cocks weigh from $8\frac{1}{2}$ to 10 lbs., and the hens from 6 to 9 lbs. The legs are yellow, and should be short, and well feathered down to the tip of the middle claw. The comb should be small and set close to the head, and is what is called a pea or triple comb, having the appearance of being cut down or rounded off, like three small peas, the centre one being the largest.

In light Brahmas the plumage of the cocks and hens should be of a white colour all over, with the exception of the hackle feathers, which are striped grey and black, and the tail feathers, which are black, slightly edged with white. The hen should have a white body, and black and white hackles and black tail.

In dark Brahmas, the cock's breast, tail, leg feathers, and under part of the body should be pure black. The upper part of the wing is of a greyish-white, the centre being black, and lower part white, tipped at the end with black. The hackle, back, and saddle feathers are of a greyish-white and black. The hen's hackle feathers should be black and edged with a silvery white, and the body should be pencilled all over, even to the end of the tail.

Brahmas are very good fowls to keep for confinement, as they are very hardy, and do well in a small space. They are good layers of brown eggs in the winter months ; but in spring and summer they are often broody, and, as they make good sitters and mothers, it is often well for people

who keep non-sitting varieties and wish to hatch a few chickens to keep a few Brahmas, as they may then be sure of a broody hen sooner or later.

If this breed is especially bred for laying only, they are excellent layers. I have known them lay from 130 to 170 eggs each in twelve months, while the show Brahmas have not averaged 40 each. A good laying strain of this breed will come up to the Rocks and also the Langshans, they will lay from 30 to 40 eggs without missing a day. I have known several specimens not to come broody the whole of the year. They do not make as good table birds as the Rocks and Langshans when they are pure, but are equal for crossing purposes. The Brahmas breed rather better than the Cochins; eleven eggs out of thirteen are usually fertile.

This is a consideration. It is more difficult to get good layers from the dark variety than the light. I was years procuring a good laying strain of dark Brahmas. If Brahmas are bred for laying only, they do not disappoint their keepers. If they average 110 per bird that is what may be called very good; it depends very much upon the treatment they receive. When they become broody and are not required for sitting purposes, they ought to be shut up at once in the coop mentioned; then they lay again in a few days. The Brahma is a good fowl to cross with other breeds. Looking over my egg book, I find that some of my dark Brahmas have laid 170 eggs each in 12 months.

REDCAPS.

This breed is a very old one, though but little known in many parts of the country. They are best known in Yorkshire, Derbyshire, and Staffordshire. In Yorkshire the

farmers call them mooney fowls, and in Staffordshire pheasant fowls. I have known better layers from the latter place than either of the others. I have tried all three. I have found them a good breed as layers of a fair sized white egg. One pullet has been known to lay 70 eggs in 70 days. The strains differ very much. They do well either in an open range or in confinement. They are rather delicate to rear as chickens, and where they are brought up with large numbers of other chickens they usually succumb at an early age. They should be brought up by themselves. If only a brood or two are required, and a little care is bestowed upon them the first three or four weeks, they will grow and feather well, both cockerels and pullets, and make fair table birds, white skin and blue legs, with four toes on each foot, free from feathers on legs and feet. In plumage they are much the colour of the golden-spangled Hamburg. They are a reddish-brown with a tip of black, a kind of half-moon. The Hamburgs are more of a spangle, and also much brighter in colour, and have smaller combs. Redcaps should have red ear-lobes and very large rose combs. When the chickens are hatched out they are of a light buff colour underneath, and they have two stripes on the back, light and dark brown. They occasionally come rather buff, and only show a dark stripe at the back of the head, and others are almost black. They are very pretty as chickens. The cockerels can be distinguished from the pullets when hatched, or at least in a week or two, as they have such a large comb. The cockerels are ready for the table when about four months old if fed and attended to well.

ANDALUSIANS.

This breed is a favourite with some fanciers, and also those who only require eggs. Their plumage is different from most other varieties, being slate colour. When the hens are properly marked they are very handsome. The ground colour is rather a light slate, each feather edged with a very dark shade. They look as though they are pencilled. The neck hackles are very much darker than the body, white ear-lobes, red-face, single combs lying over one side, dark legs (rather a blue-slate), four toes on each foot. The cock has face and ear lobes similar to the hen, comb single, and should stand erect and be evenly serrated and well set to the head. Their backs should be dark, almost black, and the breast more the colour of the hen. Andalusians do not breed true to colour: some come black and others white, and a few a very light slate with no pencilling. Those who do not understand the breed, when buying a sitting of eggs, must not be surprised if three or four different coloured chickens are produced, as some come black, some white, and others blue, and occasionally a few speckled ones will appear. The reason for their not breeding true to colour is that they originate from Black and White Minorcas. They are excellent layers of large white eggs. If the birds are sheltered from the cold winds they will lay in the winter, spring and summer months in abundance. The chicks do fairly well, the pullets thriving best and also feathering better than the cockerels. They usually commence to lay at from five to six-and-half months old. One cock can run with seven to ten hens.

ORPINGTONS.

This breed is one which the author originated in 1886, and sent out to the public. They have spread more quickly than any other variety, as they can be found in all parts of the world.

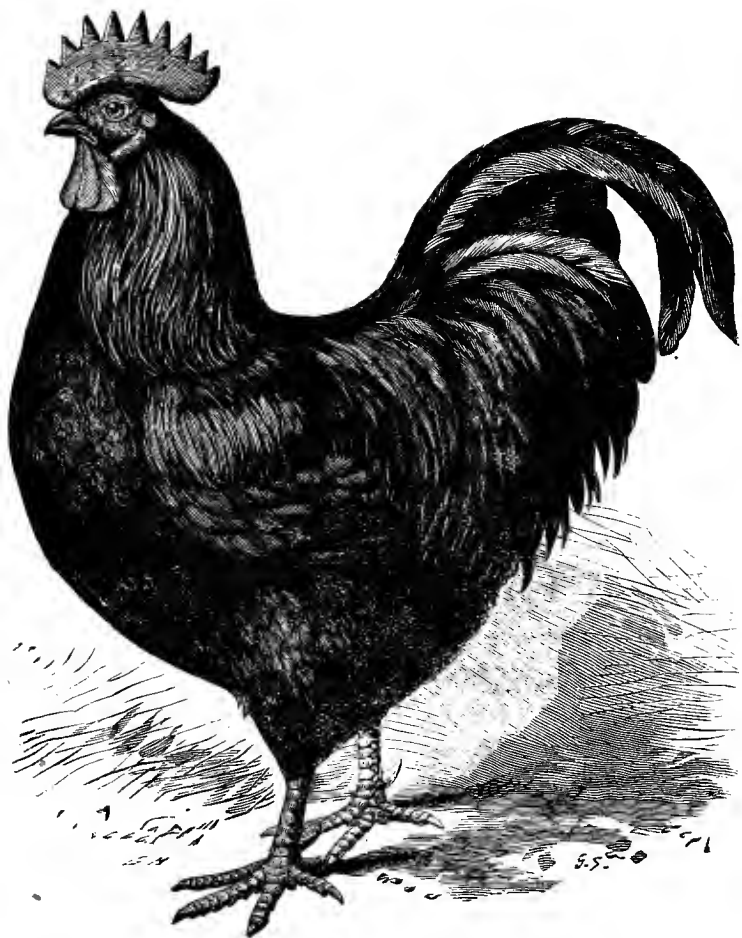
The Orpingtons have filled up the vacancy that existed in the poultry world, as there never has been any breed of bird to answer the description of the Orpingtons, which are good winter layers of brown eggs, excellent table birds, combined at the same time with a handsome appearance, and are very easy to breed, the chickens fledging quickly and growing fast.

The hens are good sitters and mothers, but are not so troublesome as many of the sitting varieties when not required for that purpose. They are free from feathers on the leg, and have a beautiful black glossy plumage, therefore do not show the dirt when brought up in towns, like many other varieties. They stand confinement and lay through the severest of wintry weather, producing a beautiful brown egg, not large, but of a fair size, just the kind to command a ready sale in town or country. If required for table they are very satisfactory, being an excellent flavour, and the breast meat remarkably white. It is said they have the finest skin of any breed in existence.

The birds fatten up quickly for table when young. A few of the cockerels come a little splashed in the hackles and saddle feathers. This is liable to appear in all black breeds, more or less, and especially in a newly-made breed. Sometimes there is not one chicken in a brood which shows a

coloured feather, and occasionally a few of the chickens may come with a little feather on the leg ; there may be two in a brood, but that is very rare. They breed truer to type than any varieties ; often there is not one with feather on the leg out of fifty.

The plumage is very glossy in both sexes, but more particularly in the cock. The sheen should be much the same colour as that of a good Langshan ; single comb, evenly serrated in both sexes, standing erect in the cock, not large, but neat, very deep and long in the breast, red face, black legs, not too long, white toe-nails, four toes on each foot, well spread out from each other. The hen's comb may fall a little to one side if it is evenly serrated and without folds in it. The large comb in some breeds denotes good laying qualities. This also means that the best laying fowls have to be sacrificed because their combs are large, and a judge passes them over. This in a great measure destroys the utility of poultry, whereas it should be *vice versa*. The poultry clubs and societies should award prizes to those which are capable of laying the largest number of eggs in twelve months. If judges would but study the laying qualities and general shape of the fowls, and not spend all their time on judging the plumage, it would be more beneficial to poultry keepers at large. The proper feathers would soon follow if the other matters were attended to as they should be. In three years our poultry would be much improved, both in laying and table qualities. The birds would be a better shape, and in many cases their plumage would be better.



BLACK ORPINGTON COCK.

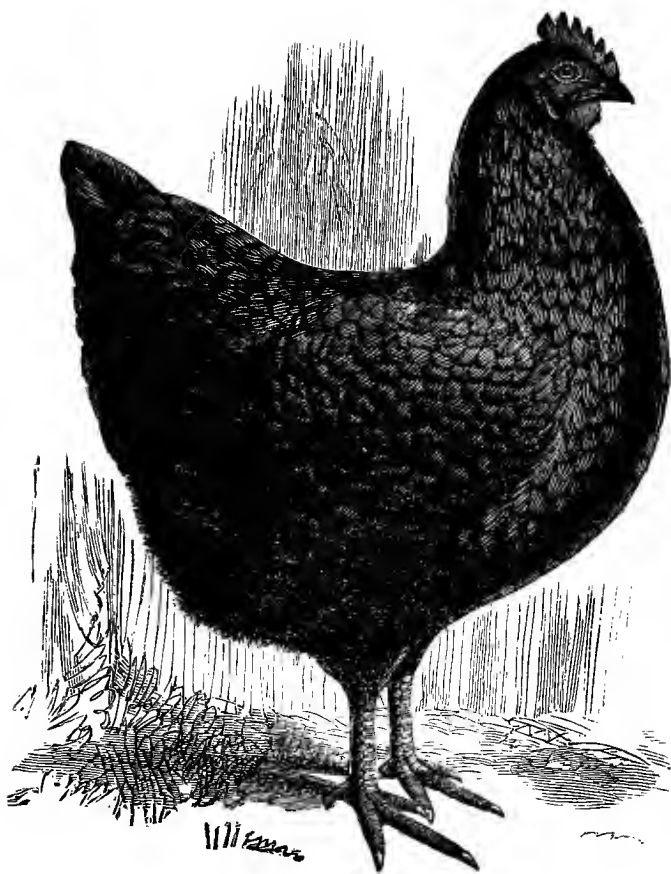
Some of the pullets come with rather a large comb and in some cases it falls on one side the same as it does in many other breeds. These birds are all right for breeding from for utility, but I do not recommend them to breed from for exhibition, though many of them would produce birds fit for show if they were mated carefully. It is not always those who have the best stock birds that produce the choicest specimens; there is great art in mating the birds. The male birds should always be fully developed in the points where the hens are deficient. For instance, if the hens have very large combs, the cock should have rather a small one, or one strongly set on the head, and if the hens are a good shape, but lack brightness of colour, the male bird should have an extra brilliant gloss upon its feathers, though it may not be such a fine-shaped bird. It is always best to make them up with an unrelated strain. I have about twelve different strains of this breed quite unrelated, but there is no difficulty in procuring fresh blood from almost any place in England, as there are many thousands of breeders of this variety situated in different parts of the world. The difficulty is, as they are such a popular breed, unprincipled people mate any kind of black fowls together, and sell the eggs as "Orpingtons." There is another danger, too, which it is well to guard against. When one is buying eggs, if he does not know the owner of the birds, he is liable to get the eggs from brothers and sisters, because in many cases a person will have a sitting of eggs one year and keep one cock and kill the other male bird, and then breed from the pullets, which are of course brothers and sisters. In this case the chickens are liable to

come very weak, not only in this variety, but it applies alike to all breeds. There is nothing like having fresh blood, if healthy vigorous birds, and good laying hens are required. The Orpingtons have been known to lay as many as from 30 to 65 eggs without missing a single day. I have heard gentlemen say that they have laid all through the winter, where it has been cold, wet, and very dirty. The pullets are usually in full lay at six months, many of them at five months. They are splendid birds to breed from, no matter whether the soil is wet or heavy, and they will do well in confinement or when they have a large range.

I knew a lady who had six Orpington pullets one winter, and she said the six birds averaged four eggs a day right through the winter. Another gentleman had 14 pullets and they averaged over 70 eggs per week during the winter. As far as my own experience goes the laying results of the Orpingtons have been better than any other of my pure breeds up to 1895, when in the very severe January and February the Buff Orpingtons beat them entirely in laying. Of course I am referring more particularly to the laying results during the winter months.

At the present day no breed of fowl is used more for crossing with mongrel hens and pure birds of other varieties than Orpington cockerels. I have heard many breeders say that it was quite a job to keep any cockerels for their own domestic use as so many farmers and cottagers want them to improve their stock.

The illustration of this variety will give my readers a good idea of what the breed is, as it is a true representation of one of my best specimens.



BLACK ORPINGTON HEN.

THE ORPINGTON—STANDARD.

It being the intention of the Club to fully develop and maintain good laying and table properties, therefore in judging this variety attention should be strongly directed to points indicating these qualities.

COCK.

Plumage.—Close, black throughout, with a "green" sheen or lustre upon it, free from coloured feathers.

Head.—Small, neat, fairly full over the eye, carried erect.

Comb.—Medium size, erect, evenly serrated, free from side sprigs.

Face, Earlobes, and Wattles.—Red.

Beak.—Black, strong and nicely curved.

Eye.—Black, with dark brown iris, full, bright, and intelligent.

Shape.—Cobby and compact.

Breast.—Broad, deep, and full, carried well forward, long straight breast bone.

Back.—Short, with broad shoulders.

Saddle.—Rising slightly.

Tail.—Medium size, flowing and inclined backward.

Hackles.—Full, both neck and saddle.

Legs and Feet.—Black, strong, short ; four claws on each foot, with white nails ; sole of feet, white.

Skin.—White, thin, and fine in texture.

Flesh.—White and firm.

Carriage.—Erect and graceful.

Weight.—Between 9 and 10 lbs. when fully matured.

HEN.

Plumage, Head, Comb, Face, Beak, Eye, Breast, Legs and Feet, Skin, Flesh and Carriage.—Same as in the Cock.

Tail.—Medium size, inclined backward and upward.

Cushion.—Small, but sufficient to give the back a short and graceful curved appearance.

Weight.—About 7 or 8 lbs., when fully matured.

POINTS FOR JUDGING.

Plumage and Condition	...	...	...	10
Head	...	...	...	5
Comb	...	...	...	7
Face	...	...	...	5
Beak	...	...	...	3
Eye	...	...	...	5
Shape	...	...	...	15
Breast	...	...	...	10
Tail	...	...	...	5
Saddle or Cushion and Back	...	...	...	5
Legs and Feet	...	...	...	5
Skin and Flesh	...	...	...	5
Carriage	...	...	...	10
Weight	...	...	...	10

100

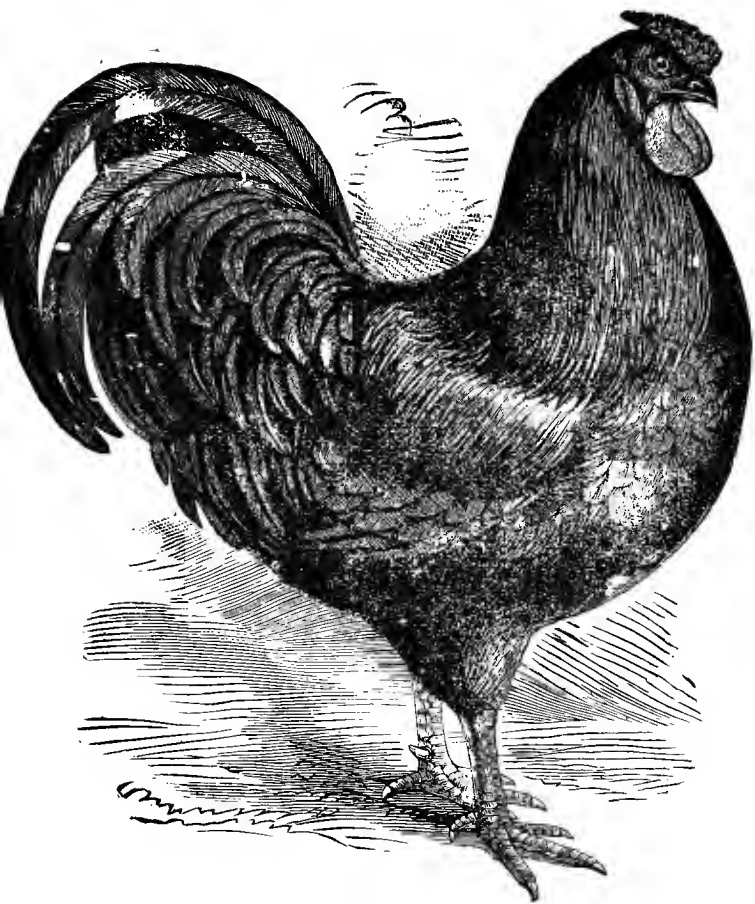
DISQUALIFICATIONS.

The slightest feather or fluff on legs or feet.

Yellow skin.

Yellow in legs or feet.

Long legs.



ROSE-COMB BLACK ORPINGTON COCK.

ROSE-COMBED ORPINGTONS.

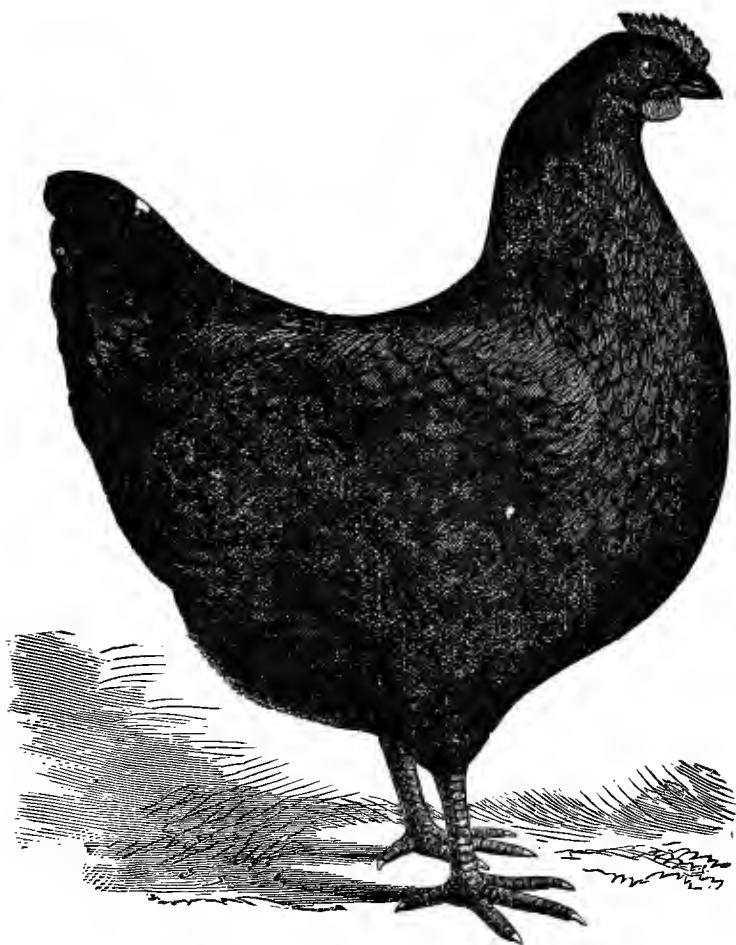
This variety is exactly the same colour as the Orpingtons and much the same in shape, the only thing they differ in is they have a very neat rose comb. This variety breed very much the same as all other rose-combed classes, that is to say, some of the cockerels come with red or drab feathers on the hackles, and occasionally on the saddle, but the pullets breed remarkably true, not two out of a hundred will come with mismarked feathers, though occasionally one will crop up with a little feather on the leg. All the chickens do not come with a rose comb. Wyandottes, Hamburgs, in fact every breed with rose combs are liable to throw single combs. Sometimes there may be thirty birds bred and not one come with a single comb, and I have known as many as three out of ten come with a single comb. This variety stands right away from any other breed, as they are large black birds with rose combs, and there is no other large black breed similar to them. This is why so many poultry fanciers and keepers in England take them up in preference to any other variety. In Australia and New Zealand the Rose-Combed Orpington is very popular. I am told it is one of the leading breeds, both in the show pen and for eggs and table purposes. They are splendid winter layers of brown eggs, quite equal to the Orpingtons in laying and table qualities, and the pullets usually commence to lay rather earlier. I have had this variety lay at four months and a fortnight old, when they have been hatched in the middle of winter. I found one pullet sitting upon 19 eggs which she had laid away before she was six months

old. Many of them are in full lay at five months old, and they are usually all in full lay at $6\frac{1}{2}$ months old if they are managed properly when young. I have known them to lay over 250 eggs in the year, and the greatest number of these have been produced in the autumn and winter when eggs are most required and command a good price.

Their plumage is a beautiful black, with a green lustre upon it, both in the hens and cocks, but especially in the latter. They make splendid sitters and mothers.

I may mention the chickens are like those of every other black variety, that is to say, they are black on the back and white underneath and round the head. Novices often get put out very much when they find chickens from black birds come black and white, but it is a law of nature and cannot be altered. Those which have most white on when hatched as a rule turn out a beautiful metallic green sheen when they become full grown, and are usually marked as the best birds. As chickens, Rose-combed Orpingtons are very hardy and can be brought up in cold and damp places. They fledge well and grow fast. Sometimes they will throw white feathers in the wings, but these usually drop out in the chicken moult. They rapidly grow into good table birds, as they have a fine deep breast and will stand confinement well. In fact they cannot be put in the wrong place. Another thing in their favour is they do not show the dirt in confined runs in towns. I can strongly recommend them as one of the best all-round fowls for both town and country.

The plumage is black throughout in both cocks and hens, with Rose combs set close to the head, with a small peak at



ROSE-COMB BLACK ORPINGTON HEN.

the back, not turning down like that of a Wyandotte, but keeping quite straight out. Red face and ear-lobes, dark or hazel eyes, black, nicely curved beak, black legs, white toenails, four toes on each foot. The cock's tail should be full and flowing, with very fine hangers or sickle feathers, with a beautiful metallic-green lustre on them. The tail should be carried fairly well back, but more upright than that of a Langshan. If carried too near the neck it is a fault. The brilliant gloss should always be aimed at when mating these birds. If the male bird has a large comb, put it with hens which have small combs. If the hens lack gloss on their plumage, mate them with cocks which have a few red feathers in the hackles. Whenever a cock shows red feathers he usually produces pullets of a good bright colour. The illustration gives a true representation of what the best specimens of this variety are like.

WHITE ORPINGTONS.

This variety is of a more recent date than the black. They are considerably smaller than the black variety and take rather a different shape to the single and Rose-combed Orpingtons.

There is the same difficulty with these birds as there is with all other white varieties, that is, although they may do well in a confined run in towns, the plumage shows the dirt and they never look nice and bright, but where they can have a nice grass run or a field to roam over they always look nice.

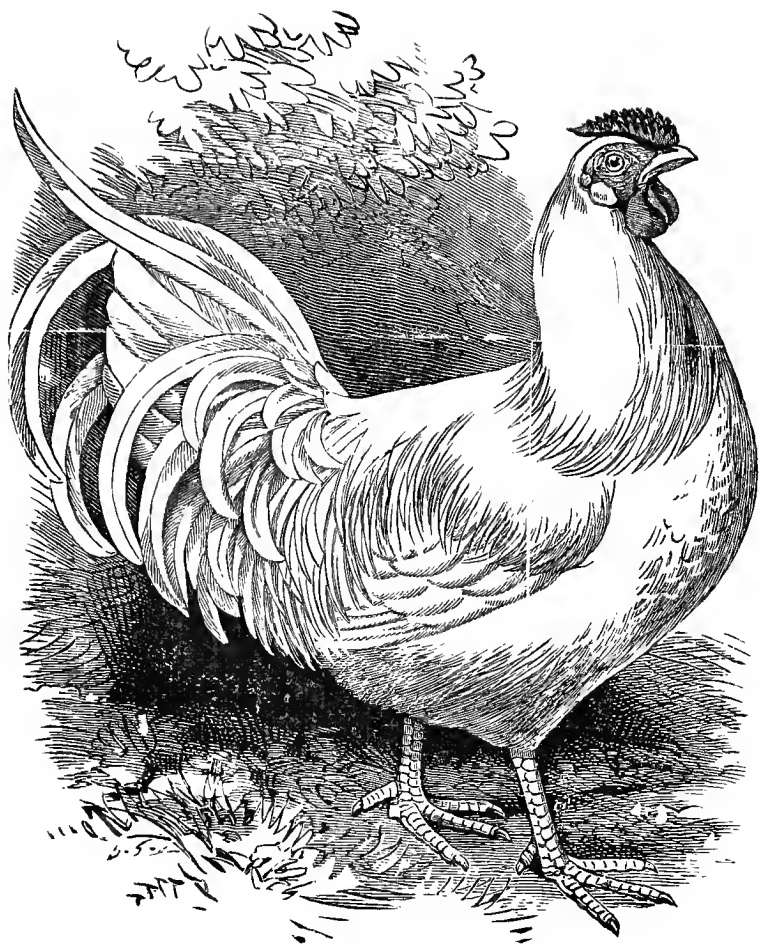
As layers they can hold their own with almost any other breed, the egg being of a nice cream colour, not quite white, of a good size. There are a few more broody, and they

make fair sitters and mothers when they are allowed to sit. White Leghorns are considered one of the best breeds for laying purposes of the non-sitting varieties, and the White Orpingtons lay about the same number of eggs taking the whole year through, but they do not breed so true as the former, as some of them are liable to throw dark feathers, while in others a few brown ones will crop up, but this is now rare. I only mention it so that those who take up the breed may not be disappointed when they find the White Orpingtons do not breed quite true to colour. The chickens grow remarkably fast, and feather as quickly as young partridges. The cockerels can be killed at a very early age : though they are not large, the skin is as white as that of a Dorking, and the legs are the same colour.

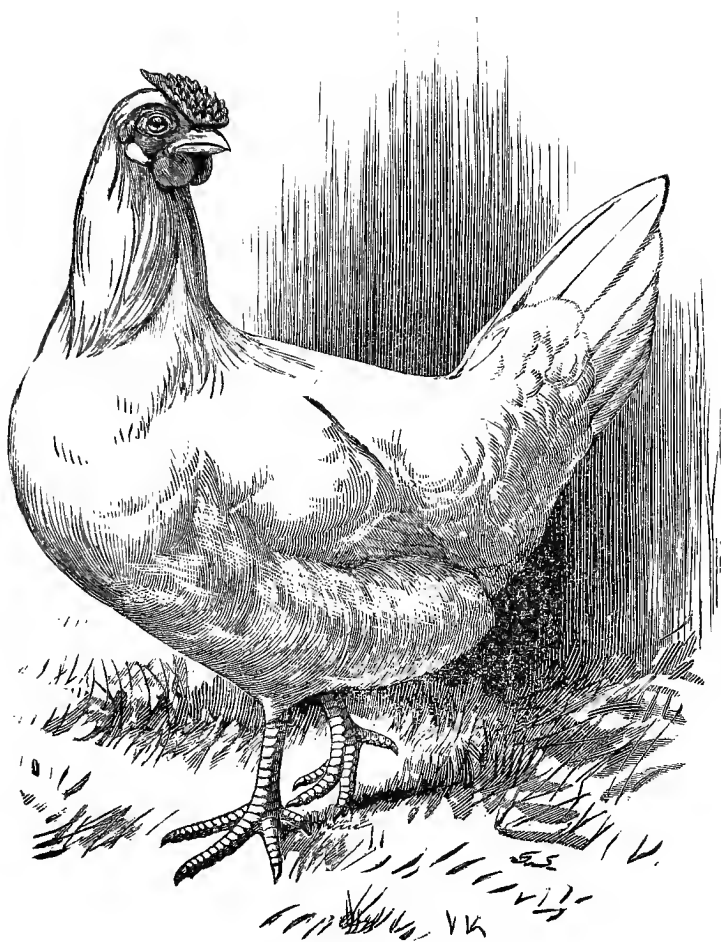
The pullets will lay at five months old, but most of them are in full lay at $6\frac{1}{2}$ months old. To those requiring white birds of a good laying variety, combined with a handsome appearance generally, I can strongly recommend the White Orpingtons.

The following are the points to be sought after in selecting good specimens of this variety :—neat rose-comb, white beak, red face, white plumage throughout, white legs, four toes on each foot. The cocks should carry their tails fairly well back, much in the same way as a Dorking, only the tails are a trifle smaller than those of the latter. This is what the male birds ought to be bred to, and the points of the hen are just the same, only the combs and tails are smaller.

The cocks are splendid for crossing with White Leghorns, Light Brahmas, or White Dorkings, that is if the owner wishes to keep the stock birds white, and at the same time does not wish the laying qualities to go down.



WHITE ORPINGTON COOK.



WHITE ORPINGTON HEN.

It must be understood that new breeds are usually excellent layers, because in making them up there is fresh blood blended together. I have heard it remarked by many poultry keepers that they always try and have every new variety which comes out as they always lay well.

There are two varieties of the White Orpington, the single and the rose comb. The two varieties are identical in character in every way, excepting the comb. In ordering eggs or birds they should be careful to state which—the rose-comb or the single variety—they wish for.

BUFF ORPINGTONS.

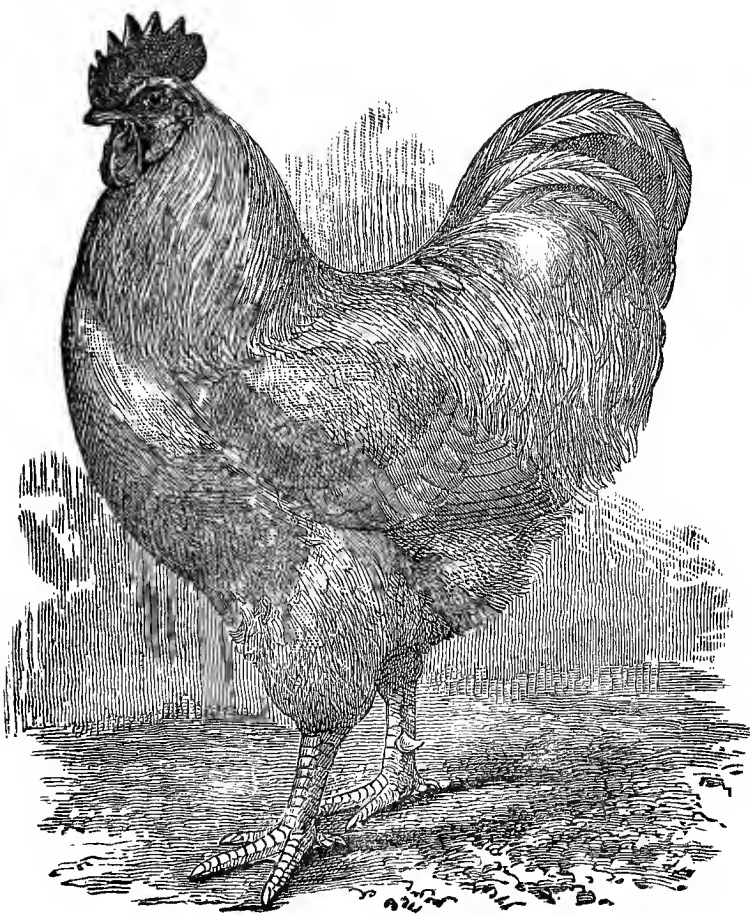
Whilst writing upon this variety I am reminded it is nine years since the Black Orpingtons were introduced. It was at the Dairy Show, in 1894, just a year ago, that the new variety made their first appearance. As the Buff Orpingtons have now been before the public twelve months, I am able to give my readers some idea of how poultry keepers are taking them up. In one year there have been over 400 sittings of eggs sold and more than 200 stock birds sold of this new variety alone. No breed or variety of fowl up to the time Black Orpingtons were brought out ever took so well in England as they did, but the Buffs have sold off quicker in the time even than the Blacks.

Some of my readers may say, Why bring out the Buffs when the Blacks took so well, is it not overdoing it? Not in the least. No one ever complains of a florist bringing out new varieties of flowers, particularly if the colour is more attractive than the old varieties. So is it

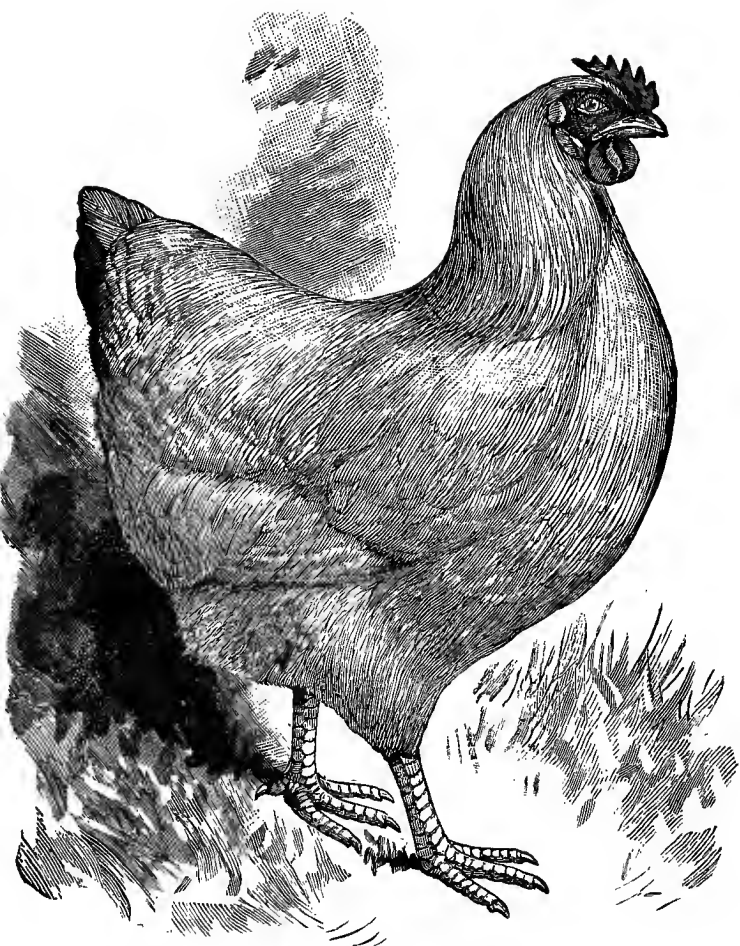
with Buff Orpingtons. They are, as nearly as possible, the same shape as the Blacks, but the colour is quite different. It was eight-and-a-half years before the birds were ready to bring out to the public.

I commenced making them when I brought out the Black and the White Orpingtons. In introducing both the latter varieties I mentioned to the public how they were made and I will do the same with the Buffs. First I mated Golden Spangled Hamburg Cocks with coloured Dorking hens of good size and from the best laying strains obtainable. These produced many pullets of a reddish Brown colour which I mated with a Buff Cochin Cock. The Hamburgs are extraordinary layers but are rather delicate to rear as chickens. The Dorking is a splendid table bird, with a very long breast, and when crossed with the Hamburg will produce wonderful layers. Buff Cochins become very broody and have a great deal of leg feathering. When bred from a good laying strain, however, they make extraordinary winter layers, often producing twenty-eight eggs each per month during Winter. When mated with the Hamburg and Dorking Cross they produce quick growing birds with splendid laying and table qualities. The chickens are so hardy they can be reared in the cold frosty weather.

On the 5th January, 1894 (during which month my readers will remember we had some very severe frosts) I had chickens of this variety hatched out and they were put in small coops right out in the open, with no shelter whatever, except just a thin bag over the front of the coops at night. The snow was simply swept away from the front of the coops.



BUFF ORPINGTON COCK.



BUFF ORPINGTON HEN.

Some of the pullets began to lay when they were four months and five days old. Those hatched in January were laying in May. Pullets at four months and three weeks old weighed 5lbs. each, and several cockerels at the same age turned the scale at over 6lbs. each, one at 6½lbs. They have been tried in the bleak open fens and marshy parts of Lincolnshire, and their owners find the cold weather does not affect them in the slightest, they appear to grow right before the other chickens. I have also had many letters during the past twelve months from those who have tried this variety, saying they never had chickens grow so fast, and they also feather well, particularly the pullets.

As they are made from three different varieties, those who go in for them must expect to get, for the next two or three years at least, a few which do not breed true to colour. Some of the chickens will show a little leg feathering, and some will come yellow legged instead of white, and a fifth toe occasionally will crop up. Some will also throw a few black feathers in the neck instead of coming a beautiful buff all through. I mention this so that those who go in for these birds will not be disappointed. People who come to my farm and see hundreds of the chickens running about are quite struck with them, and often pass the remark, "How uniform in shape and colour they all look." It is only when one gets close up to them a few of the coloured feathers are noticed.

Those cockerels which do come with a little leg feathering or yellow legs do very well for crossing with other varieties, just as well as those which come with clean legs. The pullets which do not come true to colour make quite as

good layers as the better specimens. Taking them on the whole they pay well to keep, as the birds are so useful for all round purposes. Those which come true to type and colour are very valuable, and there will be a great demand for them for many years, as they are quite different to any breed which has yet been brought out in England. This is the first Buff variety which has been brought out with white legs and skin. Nineteen people out of every twenty who see Buff birds are struck with the colour. One reason why Buff Cochins have not taken better than they have in England is because of the long feathers upon their legs and their brooding propensities. I have noticed for the last 30 years, when a Dorking has been crossed with a Cochin, what splendid chickens have been produced. Cochins are the hardiest breed which have been introduced into this country. This I have proved over and over again. I have known contagious disease break out in various poultry yards, which has seized every other variety upon the place except the Cochins.

Buff Orpingtons, if hatched early, will come on broody fairly early, but will not trouble one so much as several other varieties, because they have Hamburg blood in them. If allowed to sit, they make splendid sitters and mothers, and often come on to lay when the chickens are from 18 to 21 days old, and take care of their little family at the same time.

Buff is one of the most difficult colours to breed, that is to get a real good Buff all through. It will often fade a great deal in the sun during the summer.

Care has to be taken in mating these birds. If the pullets are a little black in the hackles, but quite clean in

the legs and of good shape they may be bred from, but should be mated with a cockerel perfectly free from any black in the hackles, if he has a trifle of feather upon the legs he must not be despised. And again, if one has good pullets, free from black in the hackles, of nice shape and colour, with a trifle of feathering upon the legs, such birds should be mated with cocks fully developed in points where the hens fail. This may be a hint to those who are mating up these birds. I have known people give from 10/- to 30/- each for fowls which have been bred from good stock and mate them together, and produce better birds than other pens which have cost five guineas each bird. The great secret in breeding good fowls lies in mating them together properly, but there are hundreds of people who do not appear to realize this fact. Both the cocks and hens of this variety should have broad breasts, be fairly short upon the legs, which should be white, and very intelligent looking eyes. This is the standard of the Buff Orpingtons for my readers to refer to.

COCK.	Colour, even Buff throughout, either light or dark shade. Tail, Buff preferable, Black or White allowed, if body Buff (as it is most difficult to produce a Buff tail), points ...	40
TYPE	Body very compact, with broad and deep OR breast, short back, hackles rather long, full	
SHAPE.	saddle, well up to tail, latter compact, carried well up with plenty of hangers, points ...	25
LEGS.	White, free from feathers, fairly short, plenty of substance, four toes on each foot, toes well spread out, points	15

HEAD.	Comb, medium, firmly set upon head, evenly serrated and straight, free from side spikes, points	...	...	...	...	...	10
BEAK.	White, or light horn colour, well curved. Eye brown, earlobes and face red, wattles medium, points	...	...	...	...	...	10
							100

Weight, eight to ten pounds. Skin and flesh white.

DISQUALIFICATIONS.

Feathers on legs. Five toes. Legs other than white. Crooked breast. Comb on one side.

HENS.

SHAPE. Body very compact with broad and deep breast, short back. Nice curve from neck to tail. Base of neck rather thick, tail fairly high.

LEGS. White, free from feathers, short, otherwise same as cocks.

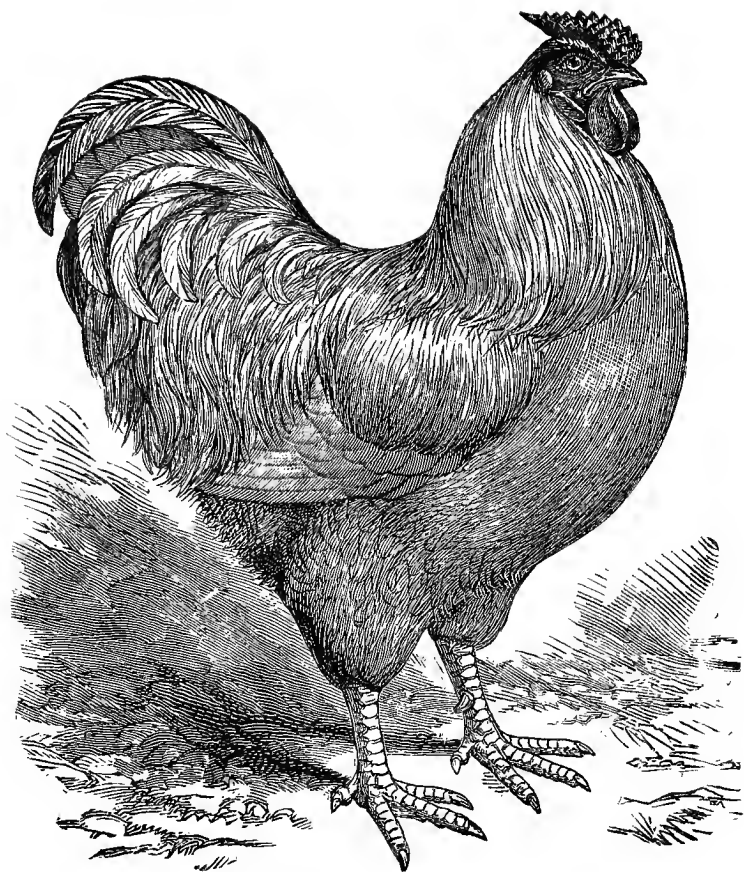
HEAD. Comb evenly serrated, standing erect, preferred free from wrinkles and side spikes.

Weight, six to eight pounds. Other points same as the cocks.

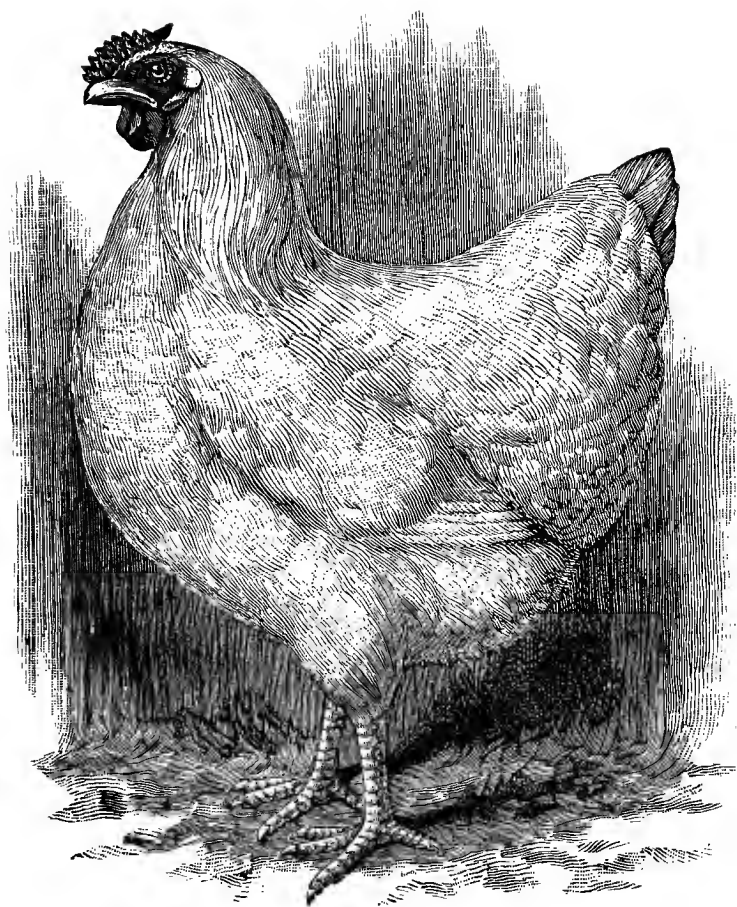
ROSECOMBS.

Rose combed Buff only differing by having a neat rose comb, well set upon the head, with small spike at back, slightly curved.

I have mentioned a few may come with yellow legs, and it often happens the best coloured birds turn out like this.



ROSE-COMB BUFF ORPINGTON COCK.



ROSE-COMB BUFF ORPINGTON HEN.

When such is the case and one is short of stock birds, he should mate a white legged cockerel with all the yellow legged pullets. Where this has been done, I have known instances where not more than two or three of the chickens out of twenty have come with yellow legs, and they will often throw birds of a better colour. Those who have good coloured birds with yellow legs ought not to discard them for at least two or three years.

Occasionally a male bird may have a few white feathers in his tail, but they are more inclined to come with black than white, particularly in the sickle feathers. If a person breeds a nice shaped bird, good colour throughout, including tail, and nice comb, he should have no difficulty whatever in selling it at a good price if he wishes to do so, say from 10/- to 10 guineas.

The Rose Combed Buff Orpingtons are exactly the same shape and colour as the single combed variety. Some prefer one and some the other, but the rose combed birds were always favourites of mine.

It must be understood, however, all rose combed fowls are liable to throw sing'e combs. Even Hamburgs, which have been out nearly a century, will do this, because the rose comb is a freak of nature in the first place.

If a person has got a good rose comb cock, and single combed pullets which have been bred from rose combed stock, and mates them together, as a rule they will produce the neatest rose combs. It is very seldom we get birds with rose combs bred from single combed birds.

Buff Orpingtons are not only good fowls for all round practical purposes, but they are also coming up well as a

show bird, so they really combine the three qualities, viz., laying and table and exhibition points.

Many of our old breeders say it is impossible to combine these three, but my experience is it is quite possible. Many of my best layers amongst the Black Orpingtons have won prizes in England, Ireland, and Scotland.



BANTAMS.

Bantams not useless—Juvenile interest awakened : results in after life—Favourite varieties—Mistakes and pleasures—Hints as to management.

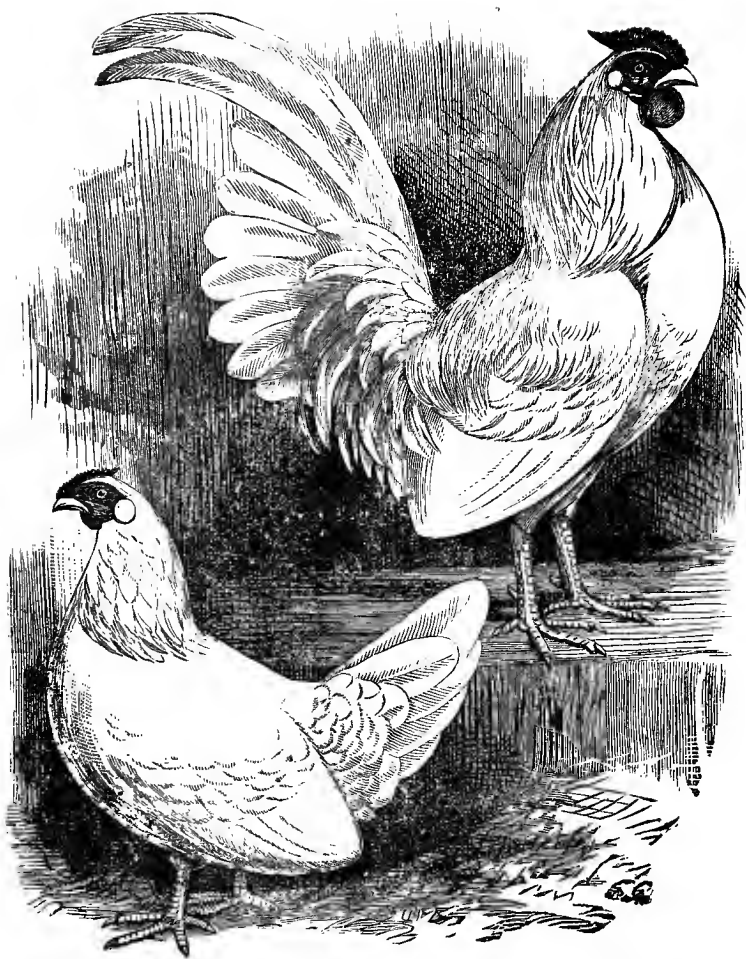
THESE small birds are often looked upon as useless by many, and even those who keep the larger breeds. The day of small things should not be despised, as small beginnings often produce large endings. There are many large breeders of the present day who only commenced with a pair of Bantams, and trace their success and love of poultry to their parents allowing them to keep these pets. I think it so nice to allow a boy or girl to keep a few fowls ; and Bantams can be kept where the larger breeds cannot. Young people must have something to do in their spare time ; and if parents do not find it for them, they will for themselves, and not always in the best direction. It would be well for parents to study their children a little more in this respect. It gives the young people a love for their home, whether the pets are fowls, pigeons, or rabbits. I have kept all three, and the former not only gave me much pleasure in looking after them, but also paid for their food, and a little over. I always had an eye to pleasure

and profit combined. Bantams usually give young people a great deal of pleasure. There are many people keep them all their lives, and make a study of them. If a cockerel and pullet are purchased, they will soon breed a pen of birds. A dog-kennel, or large box, will serve as a roosting house. A little house 2ft. 6in. square would be large enough for a cock and four hens. The game Bantams are kept more than any variety, especially the black-breasted reds.

The Duckwing and Pile are favourites with many. The colour of them should be much the same as the Game fowls of these varieties. If persons are desirous of keeping good specimens, it is well for them to go to a good show, or to where the best Bantams can be found. It is well to prepare Bantams for the show pen, especially the black rose comb. This variety requires great care. Refer to the chapter on "Preparation for the Show Pen."

BLACK ROSE-COMB.

This variety is rapidly spreading through our country, and is becoming one of the favourites in the Bantam fancy. They are my favourites, as they are not only a very pretty little bird, but such good layers and very hardy. Being black they do not show the dirt when kept in the back yards of towns. There are many of our leading fanciers who first started by keeping a pair of these birds. I always like to encourage young people in keeping these pets. This breed should have nothing but black feathers, with a splendid gloss on their plumage, especially the male birds. Both sexes should have a neat rose comb, red face, free

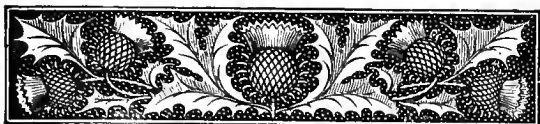


WHITE ROSE-COMB BANTAM COCK & HEN.

from spots or streaks of white, and small white ear-lobes, free from wrinkles and red spots, black legs, four toes on each foot. The cock should be very full in the breast. The smaller they are the better, if they are compact and well-shaped. Where so many make a mistake in breeding Bantams is they hatch them out too early in the season. If they are not required for the show pen until November, May or early June is the best time to hatch them out. If for the summer shows, they may be hatched out early. The smallest Bantams I ever bred were hatched in the month of September. I have found this variety the best layers of any Bantams, and also of the largest egg according to the size of the bird. They can be kept in a very small pen, if required. One male bird may run with about three or four hens. In all cases where they have not a grass run they ought to be supplied with green food. Nothing is better than watercresses if they can be procured reasonably. The chickens hatch out strong. When first hatched they are black on the back and a light colour underneath. Occasionally they throw white feathers in their wings, but usually shed them in their chicken moult.

WHITE ROSE-COMB.

These are the same shape, and have same characteristics as black, differing only in the colour of legs and plumage, which are both white.



CROSS-BRED FOWLS.

Cross-bred fowls : what they really are—The utility and great value of the system and advantages accruing therefrom—Crossing and re-crossing — Houdan-Cochin — Houdan-Minorea — Houdan-Indian Game — Minorea-Langshan — Leghorn-Plymouth Rock — Dorking-Brahma—Indian Game-Plymouth Rock—Indian Game-Dorking—Plymouth Rock-Brahma—Orpington Dorking—White Orpington—Light Brahma—Orpington-Brahma—Leghorn-Orpington.

BEFORE proceeding to give some description of cross-bred fowls, I wish to make it quite plain what they really are, for I often hear mongrels called cross-breds. What is called a first cross is a bird obtained when two pure-bred fowls of different varieties are bred together, say a Dorking and Game, and if their offspring are crossed again, the chickens are called a second cross if a pure male bird is used. If first cross hens are bred from, with a pure cock, the progeny are called a second cross. Say a hen crossed between a Rock and Langshan, if mated with a Dorking cock, her offspring have three breeds in them, half Dorking, a quarter Langshan, and a quarter Plymouth Rock, and if these are bred from again their progeny may properly be called mongrels, unless a pure cock is used, then they are half-bred fowls.

The question is often asked, Why we do not breed from cross-bred cockerels? The principal reasons are—1st, the chickens bred from them eat a good deal more; and 2nd, they do not lay so early by a month or six weeks, and altogether do not show such good qualities as the first crosses; but, of course, there are exceptions. How I proved that first-cross pullets were best was by having some first-cross and some mongrel birds hatched at the same time and all brought up together, when I found that the first-cross pullets laid a month or six weeks and some two months earlier than the in-bred mongrels.

There are many opinions as to the advisability of breeding and keeping cross-bred fowls, for while one eminent author will write, "Cross your fowls as much as possible; you cannot have too many breeds mixed;" another will say, "Pure-bred fowls are best, as, while some of them average 170 to 200 eggs per bird in the year, cross-breds will only lay 80 to 120 in the same time." My experience is that first-cross fowls, or selected mongrels, or cross-bred hens (if they are good layers) mated with a pure-bred cock, are much the best for general purposes. If a pure hen will lay from 120 to 130 eggs in a year, and she is mated with a pure cock of another breed, and he has been bred from a hen which laid about the same number in the time, the offspring will produce from 150 to 190 eggs in a year, for in a cross there are the qualities of two pure-bred fowls together; for instance, in half-bred Hamburgs and Cochins, there is part of the hardiness and size of the Cochin, and part of the plumpness, non-sitting and wonderful laying qualities of the Hamburgs; and, besides this, cross-breds are generally

larger and hardier, on account of fresh blood being introduced. I do not wish to run down pure fowls in any way, for without them, of course, no cross could be produced ; but I do most decidedly recommend a half-bred when only laying fowls are required, and have, therefore, written fully on some of the principal crosses I have tried. What I wish to make clear is this, a person may often have from 20 to 50 hens running say in a farm yard, they may be mongrel or some from pure cocks. In such cases, say ten of the best layers should be picked out and then a pure cock mated with them. Sometimes a person has nowhere to shut them up separately, in that case they should get two pure cocks and turn them down with the whole number. Farmers and those who keep a large number of birds should use pure cocks every year, as by so doing they would save 25 per cent. more a year, and pullets uniform in shape and colour would be produced.

There are, of course, many I have not mentioned, but I have written on those I consider best. For instance, if it is more convenient, a Leghorn or Minorca cock may be used instead of Hamburgh or Spanish, or Creve Cœur in place of Houdan, or Brahma in place of Cochin, &c.

It would take too much space to describe in detail all the crosses that might be made with a Houdan cock, but if people have either Brahma, Cochin, Plymouth Rock, Orpington, Wyandotte, or Langshan hens, the effect—as regards their laying qualities—of their mating with a Houdan cock would be in each case about equal if all the hens were bred from good laying strains. The pullets from the Langshan, Plymouth Rock, Orpington, and particularly

Indian Game, would make the best table birds. Why I class all these together is that some people have Brahma, or other birds by them, and if they read that one variety is a good one to mate with the Houdan cock, they immediately conclude that breed alone is the one which should be used, while possibly the birds they have would, if crossed, produce equally good results, without giving them the further expense and trouble of buying in fresh birds. All the varieties mentioned are good sitters, while the Houdan is a non-sitting variety, so about one half of the pullets will want to sit.

If anyone has a taste for crossing, and still wishes to retain his pure-bred fowls, he may easily do so by letting two pure hens run with a cock of the same breed and four or six more of a different kind, I may mention that a Houdan cock, with two Houdan, two Minorca, and two Cochin hens, answers very well, and that it is always best when crossing non-sitters to have a Langshan, Plymouth Rock, or Orpington, to be sure of a broody hen for sitting in the Spring.

The number of eggs I have given as being produced by certain crosses may seem very large, but it must be understood that it is only birds bred from the *very best* laying strains that will produce these numbers; and great attention must, of course, be paid to their feeding and management. Amateurs must, therefore, not be discouraged if their birds do not produce any such numbers for the first year or two. Those, however, who give attention to the birds, and follow my instructions, will find an increase in the number of eggs they obtain every year.

I have known fowls lay from 100 to 275 eggs in a year. It is according to the laying strains and how they are kept and managed. The owners must have practical knowledge, and this is obtained by closely watching the habits of the fowls. It is usually those who are fondest of their fowls that succeed the best in the end. A book may be a great help and guide, but this will not do all that is required in the poultry yard. Persons may get good advice from a book, but they must have practical experience if they want to do well and make their poultry pay.

HOUDAN-COCHIN.

Houdan and Creve Cœur cocks are very much the same in qualities, especially when used for crossing, as it is impossible to detect a Houdan cross from a Creve cross, and where it is more convenient to do so a Creve Cœur can always be used in place of the Houdan cock.

The chickens from these crosses will hatch out well and fledge quickly, especially the pullets. They are very hardy, and will do well in cold or *wet* weather, while, as a rule, chickens cannot stand wet weather; but I have reared these chickens from a week old; and the death rate has been very low, some years not a single chicken dying after they are a week old, although they have never been inside the hen house, or had a shed to protect them from the wet and cold at night, until a short time before laying. They make good table birds, often being ready to kill when three months old, and are very plump and of good flavour, the skin on the body being very white. Seventeen out of every 20 pullets are black; generally they have white legs, but

there are a few with dark, while some of the pullets will come with a brown mottled breast, similar to that of a thrush, the groundwork being of a darker colour. The hens lay fine eggs, generally brown, some tinted, and a few white, that will command a good price in any market. They will do well in confinement or with a large run, are very healthy, and I have never had them suffer from anything except cramp, which was caused by their laying so much in cold weather; but have known these birds suffering from cramp, and yet not miss laying more than a day or so. I have had from five to twelve eggs dropped in one night from 40 hens during the short days of winter. Altogether these are capital fowls to keep, and may be classed as some of the best birds to keep for laying and table purposes combined. This is a cross that I have tried and recommended for over 25 years, and many of my friends and customers prefer them to the *Hamburgh Cochin* for two reasons, 1st, they lay a larger egg; 2nd, the eggs are much more fertile from a *Houdan* cock than from a *Hamburgh* cock when mated with *Cochin* hens. So many customers and friends of mine have been disappointed with the hatching results of the *Hamburgh Cochin* (but at the same time very pleased with those they had hatched, as they are wonderful layers), therefore I purpose in the future to run more *Houdan* cocks with *Cochin* hens, so that I may have eggs for sitting of this cross. Almost everyone is delighted with the result when they have given them a trial. I shall always hope to have a few *Hamburgh Cochin* pullets for sale.

HOUDAN-MINORCA.

Both these are non-sitting varieties, and therefore produce white eggs, and while I am describing the qualities of the

Houdan-Minorca, I may mention that the Houdan-Leghorn pullets do not lay quite such large eggs, but more of them, especially in the winter months. I breed more Houdan-Leghorns than Houdan-Minorcas.

The birds to produce this cross can be mated either way. I prefer the Houdan cock, as the eggs are more fertile when crossed in this way. Houdan hens, having a crest and beard, are often a little timid, as they cannot see behind them, neither side face. Owing to this, rather a large proportion of the eggs are unfertile. If the Minorca cock is used, six Houdan hens are sufficient; if the Houdan cock with Minorca hens, eight to ten, and in many cases twelve hens are not too many if they have a good range. The eggs are very fertile from this cross. The chickens when hatched are dark or black on back, and yellowish-white underneath. The heads are usually black and white, and show a small top-knot and beard; they are fairly strong, fledge well, and grow fast. Most of the pullets come black, and make good sized birds; they have blue or black legs. The cockerels usually have coloured feathers in their hackles and saddles, a kind of straw colour. They require to be removed from the pullets at an early age—about three months—as they become rather troublesome. They make fair table fowls, and the meat is of a superior flavour, but very white; not a popular fowl for the market, unless hatched early and sold as spring chickens, then they make a good price, as they are very plump and have not much bone. This cross is noted for the size of the egg, as they lay one of the finest of any cross. They are eggs that always command a good price in the market, notwithstanding they are white. A few

of these mixed with smaller ones are often the means of obtaining a longer price for the small ones. Where fowls are kept for the purpose of selling eggs, I recommend some birds of this cross to be kept. In the number of eggs they differ very much according to the strain, from 105 to 220; I put the average down at 150 eggs per bird per annum. I have had them lay 240 in a year, but these are exceptions, not the rule. They will stand confinement well, and lay all through the winter months, especially if they can be sheltered from the cold winds. They are very active and want employment. They are fowls that will suit all classes of people, in town or country. They are non-sitters, but occasionally there is one that will want to sit, but they cannot be depended upon. As non-sitters I recommend Houdan-Leghorns, and Houdan-Minorcas, especially where only eggs are required and sitting varieties are not wanted. Both are good foragers, hardy, easy to rear, and good layers.

HOUDAN-LEGHORN.

For a non-sitting cross this cannot be surpassed in number of eggs and hardiness of fowl. They can be brought up in small back yards, and will grow fast and feather well, giving but little trouble. They are remarkably active as chickens; when first hatched they are black on the back and yellowish-white underneath, and usually show a small top-knot, and a few come quite white. The cockerels ought to be killed off early, as they become very troublesome when they are from twelve to fifteen weeks old. If kept longer they ought to be separated from the pullets. They do not make large table fowls, but are very plump,

have small bones, and the flesh is very white and juicy. I do not recommend them as a market table fowl, unless it is for early spring chickens, when they are not required so large. They stand the cold weather very well, and are ready for table earlier than the larger breeds. Some of the pullets commence to lay very early, sometimes at four months old. This is rather too early, as if they commence when from five to six months old it is better for them, and the eggs are larger. These are white, of a medium size, a little larger than a Dorking's. Most of the pullets come black, and if brown Leghorn hens are used some have brown hackles; if white hens are mated, one occasionally comes white. They are very compact fowls, and will work well for their living when they have an opportunity. They fly if they have their liberty, but if brought up in a wire pen they are very contented. Where eggs are required all the year round I strongly recommend the cross as a non-sitting breed, as they will stand any amount of damp and cold weather and they will not disappoint their keepers. If bred from a good laying strain they often lay 200 eggs each in a year, when kept in confined runs. They, of course, vary very much according to how they are managed. The average is about 170 eggs each per annum. Some specimens have laid over 270 eggs in twelve months. The eggs from Leghorn hens with Houdan cocks running with them hatch remarkably well, very seldom less than nine chickens out of thirteen eggs, and in many cases twelve. Leghorn hens are very good to breed from. It is much the best to run a Houdan cock with these hens; from seven to twelve of the latter to one male bird. For those who only require

eggs, and especially if only for home consumption, a more profitable cross cannot be kept, if something is given them to scratch in to keep them employed. The egg production is marvellous, and if six hens in their second year and six pullets can be kept, the owner would never be without eggs in the cold dark days of winter. This cross can be hatched very late in the season when it is necessary. July and August hatched chickens will often lay at the end of January and during February. I have known them to be hatched the last week in August, and in full lay the first week in January. This cross ought to be named the "Amateur's Friend," considering their good qualities, as they hatch out well, are very hardy as chickens, can be reared in small back yards, grow fast, fledge well, lay early and constantly, and cannot well be put in the wrong place. If they are allowed their liberty they travel a long distance, but seldom lay away from home. This is one of the crosses I recommend to those about to start poultry-keeping, and to any who cannot spare much time in looking after their birds. If a breeding-pen has the advantage of a grass run, the eggs are more fertile, and a larger number of hens can be allowed with the male birds. Hamburgs can be used, and the results are very much the same with a Houdan cock, only the eggs are not quite so large, although the laying results are about equal.

HOUDAN-INDIAN GAME.

This cross may be produced by running a cock of either breed. The best results are obtained when the Houdan male bird is used as a rule. From ten to twelve hens may

be allowed to run with either male bird, providing the fowls have a good range. The chickens hatch out well, are remarkably hardy, fledge and grow very quickly. They have a great deal of breast meat, and can be killed any time after they are about twelve weeks old. They do not often require fattening, but can be killed straight from the yard unless required for market. The pullets make good winter layers of fair-sized eggs, especially if they have their liberty, and have a wood to range in. The eggs can usually be depended on all through the winter months ; some are white, but if Indian Game are used the eggs are usually tinted. If the Game cock is used many of the chickens come brown when first hatched ; if the other way they are black and white.

I may mention in finishing up the Houdan crosses that the pullets can be bred from again with cocks of other breeds, but they always have rather a mongrel appearance, as some come with a bib, while others have a top-knot.

MINORCA-LANGSHAN.

For a black cross-bred fowl I know nothing that will breed truer to colour than the Minorca-Langshan, or Langshan-Minorca, whichever way they are crossed. Ninety-nine out of every hundred come black, with a beautiful gloss on their plumage. All have black legs, with four toes on each foot. There may be one occasionally with five toes, but this is very seldom. They are well shaped birds, and take the eye of those who are partial to black fowls. They are splendid layers in confined runs or with an open space ; they cannot well be put out of their place.

A Minorca cock may run with from seven to nine Langshan hens, or a small Langshan cock with about the same number of Minorca hens. The latter must be large and strong, if not the results will be unsatisfactory. Great care must be taken when mated in the latter way. It does not make any difference in colour and qualities of offspring which way they are crossed. They hatch out well, and make strong chickens, pullets fledging fairly well, cockerels being a little naked for a time. They lay good-sized tinted eggs, some being brown. They average from 150 to 170, and many will lay 200 in the year, usually commencing to lay when from 5½ to 6½ months old. About half of them become broody. They make good mothers, but are rather timid when sitting; they want handling gently. They make good table fowls, skin and flesh exceedingly white, of good flavour, and juicy. I do not know of a fowl a better flavour, but of course their black legs go against them in the market. The cockerels should be killed early, from 13 to 16 weeks old, if not they must be kept from the hens and pullets. The best laying hens of this cross may be kept until two or three years old. They do not get so fat internally as many other crosses do. This cross may be classed with some of the best layers, both winter and summer. They are excellent for confined runs, as they do not show the dirt. A few of them are slightly feathered on the legs. When first hatched, the chickens of this cross are black on the back and yellowish-white underneath. I strongly recommend this cross when large eggs are required all the year round. They are one of the most popular crosses we have in England, as they are excellent birds to breed from again.

In shape and attitude they resemble the Minorca-Brahma and Minorca-Plymouth Rock. I have bred an immense number of them, usually keeping several pens of this cross. I cross both ways, one pen either way, but the most economical way is to mate Langshan with Minorca hens, as more eggs are produced from the Minorca hens during the breeding season than there are from the Langshans.

If one wants a good-sized bird, brown eggs, and winter layers, the Golden and Silver Wyandottes are best to use, the former preferable. If they are crossed with a Golden Wyandotte cock, they come, most of them, with a black back and a beautiful golden-laced breast and hackles, and every pullet comes a beautiful shape. If table birds are required to be bred from these pullets, mate with a Dorking cock.

LEGHORN-PLYMOUTH ROCK.

The Leghorn cock can run with from seven to nine Plymouth Rock hens if he is a strong bird, and 10 eggs out of 12 will be fertile. Any variety of the Leghorn may be used. If the brown is used many of the pullets come that colour, and a few the colour of the Rock. If the white, there is a variety of colours, some quite white, some a mixture of white and drab, and a few the colour of the Rock. They make excellent layers of a fair sized tinted egg, saleable in market. I recommended this cross to be kept where the birds are exposed to the cold east winds, or where there is a cold or wet soil. They are very active and so hardy they cannot be put in the wrong place. They do as well in confined runs as in a grass field. For number of eggs and hardiness of fowl, there are but few to

surpass this cross. There are some pullets that will lay over 100 eggs before they are 12 months' old, and in a few cases 120. Where birds are wanted for laying only, this is one of the best crosses that can be kept, and will become one of the most prominent of the day for egg-production. There are many specimens that lay 260 eggs in 12 months. These are, of course, bred from the best laying strains, and are all well looked after. The average number of eggs per annum is from 170 to 200. They can be hatched all the year round, if required. They are so hardy they fledge like partridges, many being fully fledged at three weeks old. There are a few of the cockerels a little backward in fledging. I cannot recommend them as table fowls for the market, as their legs are a bright yellow, and many of the skins the same colour, which many people object to. The flesh is juicy, but with rather a yellow cast upon it, especially when bred from good stock birds. They are of a fair size, mature very quickly, and may be killed at three months old. If kept any longer, they must be separated from the hens and pullets; if not, they become very troublesome. The pullets are of a more uniform colour when the Rock cock is used, as many of them are marked like the Rock. The legs and beak are a much brighter yellow. A large Rock cock should never be allowed to run with Leghorn hens; if so, many of the latter will be injured dangerously. Late-hatched Rock cockerels should be used for this purpose. The birds are much shorter in the leg and the eggs will prove more fertile. If the Rock cock is an active bird, not less than nine hens should run with him, rather over than under that number. It does not affect the size or colour of the eggs which way

the birds are crossed. About five out of twelve of the pullets want to sit.

DORKING-BRAHMA.

This cross is very popular. The best way of crossing is to have a Dorking cock, with from six to nine Brahma hens ; either variety of Dorkings may be used for crossing ; the coloured or silver grey are the best varieties to use, but the former is a little larger, and is more used for the table.

The chickens from this cross are healthy and strong, may be hatched early, grow very large and make good table birds. The cockerels should be killed off when they are from three to four months old, as, after this, they will not be fit to kill until they are six to eight months old, when they will be like young turkeys for size, and will realize good prices in the leading markets. They are a splendid cross for the Sussex fatteners, as they make up well, and always realize a good price in the London market. The pullets commence laying from seven to eight months old, and lay better than the pure Dorking, but are often broody ; and if any are allowed to sit, care should be taken to select those that have four toes on each foot, as when the hens have five large claws on each foot, they break the eggs and kill the chickens when hatching out ; if those with large feet are used for sitting, the young chickens that are hatched first should be removed while the others are hatching, and placed in wadding in a box or basket before the fire, to prevent their being trampled to death.

If desired, Cochins may also be crossed with the Dorking, the chickens from this cross will resemble the Brahma-Dorkings in many ways, but the cockerels grow a little

longer in the leg. As a rule the pullets lay about the same, and most of them come a buff colour.

If the owners of such cross-breeds, as mentioned above, wish to do away with broody hens, and, at the same time, desire to have an increase in the number of eggs laid and retain delicacy of the flesh, I advise their running the cross-bred pullets with a Minorca or Houdan cock, using the Houdan if possible, as the colour of the legs is more suited for table.

By breeding in this way there will not be half so many broody hens, and those that are broody will be more easily cured and commence to lay much sooner; the chickens will be quite as hardy, grow shorter in the leg, feather earlier, have more breast meat, and only about two out of twenty will have blue or dark legs. The cockerels will be ready for table two weeks sooner, and the pullets will lay six weeks to two months earlier, laying, as a rule, when they are from five to six-and-a-half months old. These birds are excellent for anyone with plenty of room, as they scratch and look well after their living; and about 10 to 20 per cent. more would be realised by again crossing in this way than by breeding the first cross of Brahma-Dorkings or Cochin-Dorkings.

In selecting the birds for breeding the above, care should be taken to choose the hens that lay best, and a Houdan cock with as light-coloured legs as possible.

INDIAN GAME-PLYMOUTH ROCK.

This cross can be produced either way. A vigorous Indian Game cock can run with from eight to twelve

Plymouth Rock hens. The chickens can be hatched all the year round, if required, and are very hardy and strong. They keep very free from cramp, fledge quickly and grow fast. They make heavy table fowls, having a deep breast, but unfortunately many of them have yellow skins and legs, and occasionally a few have bronze legs, which is rather against them for the market, but as they have such a deep cut on the breast they are a very favourite bird in spite of their yellow skin ; these sell better in country town markets than in London. They can be killed very young, as early as 11 weeks old ; from this age to six months they are always ready to kill when well attended to. The cockerels are rather long in the leg, but in this respect the pullets are very moderate ; they have a good-shaped body. Many of them come the colour of the Game hens, but when a Rock male bird is used, 18 out of 20 come that colour. A Rock cock may run with from eight to twelve Game hens, if they have a good range. This cross makes good autumn and winter layers of fair sized tinted eggs. They are good sitters, and may be trusted with valuable eggs : not one in a hundred will fail. They are excellent mothers to their own chickens, but if other chickens of different sizes and ages are allowed to run with them, they will kill them, as they are so very spiteful. They will defend their own chickens from rats, stoats, hawks, cats, or dogs in the day time, if they have their liberty. Nothing comes amiss to them. They are an excellent cross to keep where young pheasants are reared, as they can be depended on as sitters, but are very gentle mothers to their own little ones. They become broody early, so that they will usually hatch out chickens or ducks

in January or early in February, and bring up their brood if required, and then sit again early enough for pheasants' eggs. They are a most valuable fowl for gamekeepers, or to those who have a large range for their poultry, and wish to have eggs in the autumn and winter months, they are also early sitters and good table fowls for home consumption. This is one of the best crosses to keep for these purposes.

INDIAN GAME-DORKING.

These birds may be crossed either by running a Game cock with ten Dorking hens, or a Dorking cock with seven Game hens. The chickens will hatch out well, are remarkably hardy, and feather well, often being fully-fledged at three weeks old. They make *very good* table birds, being ready to kill at ten or twelve weeks old ; but they may be kept much longer, if required, as the breast meat does not waste away on the young cockerels after they are four months old, as in most other breeds, but, on the contrary, increases. If well fed they do not require fattening, but may be killed at a moment's notice, and will be found in splendid condition, the flesh being white and well-flavoured.

The pullets make fine birds, and lay a medium-sized egg, but very rich in flavour ; they average about 100 to 125 eggs in the year according to the laying strain, being fair layers in autumn and winter, but poor in summer. Both parents being sitters they are often broody. They make good mothers where only a few chickens are reared ; but, if many of different sizes are brought up together, they often kill them if they go in the wrong coops.

I do not recommend these birds to anyone with only a small yard, as they require a good open run, but I recommend them strongly for a gentleman with plenty of room, or a person who wishes to breed for the London markets; as they realise the highest price of any cross-breds for table purposes. They fatten up well when put into the fattening coop.

PLYMOUTH ROCK-BRAHMA.

Where brown eggs are required this is one of the best crosses to keep. They can be produced either way, by running an active male bird with from seven to nine hens of either breed. I prefer using the Rock cock, as the pullets come a more uniform shape and colour; eighteen pullets out of twenty will take the colour of the Rock. The chickens hatch out well, are remarkably hardy, and stand the cold weather. They make splendid large birds, and I have had pullets weigh $7\frac{1}{2}$ lbs. to 9 lbs. each at ten months old. The chickens do not grow very fast the first two months, not feathering very quickly; but after that period their growth is very rapid. They commence to lay when from six to seven-and-a-half months old. They are excellent autumn and winter layers of brown eggs, some very deep in colour, which makes them very saleable, and especially as they are laid in the winter. They will often lay over 100 eggs from the middle of October to the middle of March, if not allowed to sit. They make splendid sitters and mothers, and can be sent on a journey, as removing them to a fresh nest does not put them out in the least. For this latter purpose they are simply invaluable. If not required for these purposes, they should be shut up

at once in the broody coop; if not, they become very troublesome. The cockerels come various colours, and are rather long in the leg. They do not make the best of table fowls when very young, as many of them come with yellow skin, but if they are run on to six or seven months old, they grow to an enormous size, but the quality of them is only second rate in the markets. Notwithstanding this, their flesh is excellent, being very juicy. They should be killed at the age of four or seven months, as between these ages they lose much of their breast-meat; but if kept until seven months old, they are like young turkeys, and will weigh from 9lbs. to 12lbs. each, if well fattened. For a cold, damp, exposed place this is an excellent cross to keep, as they will lay when the snow is on the ground, and stand confinement well. They should not be overfed with hard grain, especially maize; if so, they get too fat internally, unless they have boiled rice at the same time; this counteracts the action of the maize.

ORPINGTON-DORKING.

This cross may be obtained either way. If active, an Orpington may run with from eight to eleven Dorking hens, that is if he is mated early in the season. This makes a vast difference, as Dorkings are not very early layers in the winter months, but at the same time are very partial to the male birds, so that many of the eggs are fertilised before the hens commence to lay. It is much the safest way to use the Orpington cock if early chickens are required, as the cold winds do not affect the male birds of this breed as they do the Dorkings. There is not sufficient attention

paid to male birds in breeding, especially early in the season, and yet this is chiefly where the success or failure commences. Cocks for breeding in all cases should be strong, healthy, vigorous, and not brought up in glass houses or heated fowl-houses, as when such birds are mated with hens many early-hatched are almost out of the question. The Orpington hens lay much better in the winter than the Dorkings, so that it is easy to obtain eggs from the Orpingtons. If it is very early in the season a Dorking cock should not have more than from six to eight hens, but if they have a very large range they may have ten. Too much care cannot be bestowed on mating fowls for breeding purposes. The chickens hatch out remarkably strong from this cross, and can be hatched all the year round if required ; the pullets fledge very quickly, also most of the cockerels, but about two or three in twenty are a little naked. The cockerels grow to a very large size, and if well fattened will run from eight to ten pounds each at the age of six or seven-and-a-half months old. This cross not only produces a large table fowl, but the quality is excellent. I know no other cross to equal it, taking everything into consideration. As chickens they are remarkably hardy, grow fast, even in cold weather ; the legs are usually white if mated right.

The flesh is remarkably juicy and of excellent flavour, and if the birds are fed properly they will command the highest rank in the market. Some people prefer them to Game-Dorking because their breasts are much longer, but there is not quite such a deep cut of meat on them, and the skin and flesh is much whiter. This cross ought to be bred more for market

and also home consumption. This will be when it becomes more known, and there is an increasing demand for good table fowls in all the leading markets, especially in London, and good prizes given at shows for the best cross-bred birds. An Orpington cock that is selected for mating with Dorking hens should have a long deep breast, and if pale in the legs so much the better, and should have a good carriage ; plumage is nothing. When the Orpington cock is used, seventeen out of twenty will come black in plumage. When the Dorking cock is used they come more of a mixture, and the legs are usually rather whiter in colour. The pullets are of excellent shape, and make good autumn and winter layers, most of them laying a good-sized tinted egg, saleable anywhere. This cross will stand confinement fairly well, but should not be kept a second year for laying as a rule, unless very good layers, as a few specimens have been. When kept in close confinement they frequently become very fat internally. They do well in a moderate run for the first year, but after the pullets have laid one year, that is when they are from eighteen to twenty months old, just before they commence their first adult moult, they will weigh from six to nine pounds each, and are in good condition for the table. They make excellent sitters and mothers, and come very broody in the season. March-hatched pullets will sometimes sit in December. They have a great deal of heat in their bodies, and can be set on Goose or Turkey eggs, if required. They are very quiet, and can usually be removed to a fresh nest, and can cover a large number of eggs. If it is cold, frosty weather, not less than thirteen should be put under them ; I do not put less

than eighteen. I would recommend less rather than more to those who may not understand making the nest ; it is best to be on the safe side. I give this cross the preference for good table fowls, and some of the most useful breeds to keep.

No bird has been used for crossing purposes in farm-yards, and among ordinary stock so much during the last three years as the Black Orpington. Thousands of them have been used all over England for this purpose ; indeed there are more hens and pullets crossed with Black Orpington cocks than of any other variety in spite of their black legs ; as they have increased the size of the fowls, improved the eggs, and hucksters who have sent them to London markets from the Midland Counties say that they have got threepence a head more early in the season than they have got for birds of any other cross. At present there is a great demand for the Buff Orpingtons in the fattening country, because they are such quick growers. One large farmer ordered ten of them specially for crossing. They will become great favourites for this purpose, as they have white legs, skin and flesh ; and are good layers, particularly in cold weather.

HAMBURGH-COCHIN.

Hamburgh-Cochins are excellent winter layers, and handsome birds. In the former edition of my "Poultry Book," I gave the number of eggs laid in a certain time. In this edition I am saying very little about them, because people have been disappointed in the hatching results from the Hamburgh cock and Cochin hens. They

are just as good layers as ever, and in reality one of my favourite crosses ; but I am recommending a Houdan to be used in place of Hamburg, and in another part of the book I state why. If people can procure Hamburg-Cochin pullets, already hatched, purchase them, as they are splendid looking birds as well as extraordinary winter layers.

WHITE ORPINGTON-LIGHT BRAHMA.

Sometimes, when the owners of light Brahma fowls are satisfied with the laying results, and still a little disappointed in the cockerels for table purposes, there not being such a deep cut of meat on the breast as they would like, they often ask the question, "Can I still retain my white clean-looking fowls, and have as many eggs, and a little better table fowl?" I answer "Yes; the white Orpington is just the fowl you require." When the white Orpington cock is used with the light Brahma hens, the results are very satisfactory. The hens lay better, from 30 to 40 eggs more each in the year. The chickens grow faster, fledge quicker, lay about six weeks earlier, and the cockerels are much better table fowls. They will stand confinement moderately well, if required, but are better for a grass run. A white Orpington cock may run with from seven to nine Brahma hens. The chicks may be hatched out all the winter if required. Eighteen out of every 20 will have white legs ; flesh excellent, fit for any market or a nobleman's table.

ORPINGTON-BRAHMA.

When black Orpingtons and Brahmas are mated together they produce very large handsome birds, and most of the

pullets come black. The latter are splendid winter layers of a large brown egg, and make excellent sitters and mothers. They can be sold at a good price early in the spring for sitting purposes, after they have been laying all through the winter. They are as good as Plymouth Rock Brahmas for sending upon a journey, or for changing from place to place, as they are so quiet and docile. This cross can be set on Turkey or Geese eggs, or trusted with valuable pheasant's eggs, and they make large table birds, the flesh and skin are also very white.

As chickens they are remarkably hardy, they grow and fledge well, especially the pullets. This cross cannot be put in the wrong place, as they will stand the bleak cold winds and damp soils. Some of the cockerels, if fed well, will weigh from 8 to 10 lbs., when they are six months old. This is a consideration when they are required for home consumption, but they are not a cross which would sell well as tip top table birds in the London markets. In the country town markets, especially in the north of England, no class would sell better, as they have such an immense frame. They are splendid birds for a novice to keep, who has not had experience, as they are so little trouble, and are so strong and hardy, both as chickens and adult birds. If they are kept the second year, care should be taken not to get them too fat internally, but when they moult out early in the autumn, after the first year's laying, they will often lay all through the second winter. When they lay late in the autumn it is wisdom to kill and eat them, as the smallest of them seldom weighs less than 6lbs. I have had some of them turn the scale at 8½lbs.

LEGHORN-ORPINGTON.

These breeds can be crossed either way. A Leghorn cock may run with from seven to ten hens. If they have a large range 15 hens will not be too many, and the eggs will be fertile. They make fair-sized birds, not large, and good layers of a brown or tinted egg. The chickens grow fast, and fledge well at a very early age. Many of the cockerels are ready to kill at three months old. If a white Leghorn is used some of the pullets will come white, but the greater part of them are black. If a brown Leghorn is used most of the pullets will come with black bodies and brown and black hackles. They are much the same in shape as a pure Dorking, the flesh being very white and juicy. In some instances it may be more convenient to use an Orpington cock with Leghorn hens. When this is the case, a small compact bird should be selected. If not, many of the hens get very much injured, and a number of the eggs will be unfertile. This cross can be bred from again with a Houdan cock, but they will lay white eggs. When brown eggs are required a dark Brahma should be used.



SURREY AND SUSSEX FOWLS.

Surrey Fowls : their excellence and consequent leading position as market fowls—The Author in Surrey and Sussex—The Surrey system of Feeding—Surrey Fowls, past and present—Sharp Gilt for Surrey Fowls—How Surrey people keep their chickens dry.

THE Surrey fowl takes the lead in the London market because the Surrey people were more successful in fattening poultry years ago ; no fowls could equal the Surrey fowls for fulness of breast, whiteness in colour, and at the same time an excellent flavour, so much so that the consumers of fat poultry usually ask for Surrey fowls, and when the salesman in the London markets is selling poultry, all the best fowls take the name of Surrey fowls, no matter where they come from. Surrey takes the lead. I heard some years ago from the people who had visited Surrey what a number of birds were bred and fattened there, and also went myself to several towns and villages in that county, but was not quite satisfied with what I saw. I heard of these notable breeders and fatteners, but could very seldom find a place where the poultry were fattened for market, and always returned home a little disappointed. In the summer of 1885 I was determined to find out more about these notable

fowls. I drove through Surrey, Sussex, and Kent, taking a different route each time, driving in all about 244 miles, calling at farmhouses and cottages, and having a little chat with many of the inhabitants. This I have done many times since, and I seldom go less than six times during the year through these counties; as I am very much interested in the branch of poultry-keeping the people manage so successfully. I think I may say I always return a wiser man, with some fresh hints and ideas. In some cases I was able to obtain a little information, and in others to impart a little, especially in the way of breeding, as there is plenty of scope for this. In many places their breeds want revising. In a few cases I had introduced fresh blood, which they needed badly; where I had done this, many pressing invitations had been given me to call upon them, as they said they could then show me the difference in their birds. Where they had introduced fresh blood there certainly was a marked difference in the chickens. The laying qualities are what they most need in those localities, which I will refer to later on.

Though the fowls are called Surrey fowls, the greater part of them are bred in Sussex and Kent, and I believe there are more than double the number of fowls fattened in Sussex than in Surrey. There is one country station in Sussex where 20 tons per week, on an average, of dead poultry, are sent to the London markets, and from the 1st of April to the middle of June they average 36 tons per week, and just the very busiest week 46 tons have been sent away in one week. When I heard of this I thought there must be some mistake, but I obtained from the station-

master himself the figures that I now quote. The chickens are from eight to twelve weeks old when they are purchased, that is in the spring and early summer ; in the autumn and winter they are older—from four to six months old. I have known them hatched in May, and weigh 10 lbs. by Christmas. Of course, they are fattened by those who thoroughly understand their business, with a cramming machine. These large fatteners will kill from 300 to 500 in a day, according as the market runs. When the London season is principally over they send them to seaside places—Brighton, Eastbourne, Hastings, &c., so they really command a good price all the year round. They use oat-meal, or what they call Sussex ground oats, a little barley meal, skim milk, and rough refuse fat from the butchers, which is boiled and passed through a sausage chopping machine, so that it will mix up nicely, and suet. The milk is bought up from farms. The rough fat is purchased in London at 2s. 6d. per 8 lbs.; this is chopped fine and mixed with the meal into quite a soft substance (about the thickness fat pigs are fed on), so much so that it does not hold together when the birds peck at it. It is so soft the feeders have to put it in troughs with spoons, or pour it in out of the pail. The fowls have neither corn nor water while put up to fatten. They are usually up from twelve to fourteen days, according to the condition of the fowls. They are fed morning and evening with as much as they can eat. Care is taken not to put too much in the troughs at once, then they soon clear it up and look for more. This is one of the secrets in fattening, not to put too much in the troughs at once ; if so, they soon turn away from the food. If it is given them a little

at a time, each one of them eats faster, which entices the others to eat, as each one tries to eat it from the other. The last seven or ten days of fattening they are crammed by machine ; it took formerly two men to cram a fowl, but now with an improved treadle machine one man can perform the operation as successfully and quickly as the two could under the old system, viz. : about 20 dozen in an hour.

Some of the fattened chickens are in sheds, and some out in the open air, six or eight in one coop together. In large fattening establishments one large pen, size 10 feet long by 16 inches wide, is divided into three compartments, and six birds are kept in each. There is usually sand scattered underneath the pens every morning, for the excrement to drop on, which is all swept up every few days. There appears to be no smell, as they are out in the open air or in open sheds. The pens are about two feet nine inches from the ground, and arranged so that there is just room to pass up between the rows of coops. The principal place for fattening in Sussex is Heathfield, the country village I spoke of as sending off so much poultry from its station, which is about 16 miles from Hastings. There are hundreds who fatten poultry in a small way. Fattening in these districts is a distinct branch of the business. I know a few who fatten their own, but these are few and far between. Almost all cottagers in some districts in Sussex, Surrey, and Kent keep poultry and hatch chickens all the year round. They keep a few old stock birds to lay, and many of them never think of selling an egg ; they set them all, unless a few are consumed in their own family. I am told the poor rates in those districts are very low, as poultry-

keeping is the means of keeping many poor old people out of the workhouse. When old people get beyond work they can keep poultry, and if they have been accustomed to it it gives them great pleasure in their old age; more than that, it butters their bread, and enables them to put on a warm coat or a warm dress, whichever the case may be.

How different the whole country would be if this thrift and industry were carried out through England, Scotland, and Wales, or even throughout the world, wherever there is a race of people. I have not met a man yet, either white or coloured, who would say "No" to either new-laid eggs or a good roast fowl if he had the opportunity. I must say the cottagers of Surrey and Sussex are patterns to our English people for industry. Their gardens are full of flowers during the summer. I call them kings in their own castles. Many of the women are up at from five to six in the morning through the spring and summer.

Some may ask what breeds Surrey fowls are. They are no particular breed, being all mixed crosses. The breeds vary a little in the different districts. Many of the owners have not the slightest idea what breeds or crosses they are. The breeds are left in the hands of the higgler (who go round to buy up the birds from the poultry keepers and sell them to the fatteners) in most cases. They change the cock birds, and their choice is usually a good one, as far as the table qualities go. They pick good plump fowls with white legs and full in the breast, and in most cases they produce good table birds; but there are not many good layers amongst them, in the winter more especially. They lay fairly well in the autumn, as they have several rests during the spring

and summer with bringing up young chickens. There are some hens bring up as many as six broods in a year. Many of them rear three or four broods ; but the great difficulty is they cannot get sufficient eggs in the winter ; there are many of the breeders who have to buy. There are some farmers who keep hens for laying only, and do not rear any chickens for market. They sell the eggs to the higgler, who distribute them among the breeders. Each higgler has regular customers ; some supply them with eggs and broody hens at the same time, and most of them are very fair-dealing men, unlike most poultry-dealers.

The old-fashioned Surrey fowls were principally Dorking, with a little Game blood in them ; there are but few to be met with now. The principal breeds are Game, Dorking, Cochin, and Brahma. There are many places now where the Plymouth Rocks and Langshans were used, but of late years greater improvements have come about through using Indian Game, Dorking, and Orpington blood with the ordinary Sussex hens. In many cases Brahmas are used, as any bird crossed with a Brahma fattens well. They avoid Hamburgs, Leghorns, Minorcas, Andalusians, and Redcaps as much as possible. Young fowls do better in those districts than old fowls do. I believe this to be owing to a deficiency of grit, as in some of those districts there is a kind of sandstone used for the roads, and sharp grit is almost out of the question ; though there is grit, it is not sharp. I keep fowls in Surrey, but send them sharp grit prepared from flints and pebbles. Many people buy what is called shingle from the sea-shore. There are some firms sell it, but it is of little use, as grit or stones that have

been washed upon the sea-shore are quite smooth; the friction of the water and the stones together wears the edges as smooth as glass. The fowls eat it all right, but it does them very little good, as most of it passes through their bodies in less than 24 hours, but the sharp grit usually remains in until it is worn smooth. Sometimes it is weeks before it passes. When it is picked up by the fowls it is as sharp as a knife, and when it passes out it is as smooth as marble. It is most important to see that the fowls have a good supply of sharp grit, as this is the only means they have of digesting their food.

It is care in such small details that makes success easy. The Surrey people have ever recognised this, and still keep abreast of the times, adopting any method that they see will bring about better results.

The breed of the fowl is not so much to go by as how it is fed or fattened. Our Surrey and Sussex fatteners have fowls from Ireland. Hundreds come over at a time. They are fattened in the same way, and sent to the London markets and other places. It would take a person with excellent taste to distinguish one from the other when cooked. Most of the fowls are sold for Surrey fowls. It is the way they are fed and not so much the breed. They have some almost pure Brahmas and also Cochins, and they make them up to splendid table fowls. I hope many may take the hint on Surrey fowls and follow in their footsteps. I have referred to fattening in detail in the chapter on that subject. Some may say they do not live in Surrey or Sussex. This may be, but fowls may both be reared and fattened in other parts of England. Many say

the Surrey soil is so much better than elsewhere. Perhaps it would be better if turned the other way about. The Surrey people can manage their poultry so much better than in many other parts of the country. I think that would be nearer the mark. There is much heavy, wet land in many parts where these birds are reared. In some places it lies low, a clay-loam soil, and in spite of all this they are successful in rearing fowls. Many of them place their young chickens under sheds in coops. There are but few use a bottom to the coops, not more than one out of ten. They use old sacks or bags at the bottom of the coops in wet or cold weather in the middle of the winter, and dry them by their large wood fires, so that the chickens are kept as dry as possible.



POULTRY FARMING AND KEEPING.

Questions often asked with regard to Poultry Farming—Ignorance—Failure — Distrust — Popular suspicions concerning Poultry Farming—The commencement: How to begin and how not to begin—Theory one thing and practice another in Poultry Farming.

THE question is often asked, “Does poultry farming pay?” I have had some hundreds of letters during the last twelve years asking me this question. I will try and answer it in this chapter for the benefit of the public, or rather, those who read it. The first question that is usually asked is, “How many fowls must be kept to bring in an income of a certain sum?”—it usually runs from £100 to £500 a year. And, “How much capital will it require to start and carry it on?” And, “How and where could the produce be sold?” And, “How should the chickens be hatched—under hens or in incubators; and, if the latter, which is the best and where can it be purchased?” These are not easy questions to be answered at all times. In reply to most of my correspondents on this matter, the first question I put to them is, Are they well acquainted with the management of

poultry, and how long have they kept the same, and about the number; and do they understand diseases and the different little ailments which poultry are subject to? In many cases my correspondents have never kept a fowl; in some they have kept a small pen and have not had any disease in their fowls, and seldom know there is such a thing as disease in poultry; and because half-a-dozen fowls pay well, they think that if they have a few hundred a fortune will soon accumulate in this direction, and with so much pleasure combined. There are many who have started, and unfortunately have lost their little capital. Some years ago nearly every poultry farm that was started came to grief, but I am pleased to say things have altered since then, as those who have started during the last few years generally have known a little about what they were doing before commencing, and some I know of are doing very well indeed. I have known as much as £4,000 to have been lost in one large undertaking in five years, and in small concerns from £200 to £1,000. The old saying in our country is, "That poultry-farming will not pay." It will pay if started and managed properly by those who understand their business. Who would think of putting a sea-captain to manage a linen-draper's shop, or would a farmer engage a confectioner from a town to manage his farm? The contrast is as great in respect to people starting poultry-farming without any knowledge of the same. It is more often tradesmen who have had a business in large towns who start. They think poultry-farming is so simple that anyone can manage it. It is simple to those who previously understood it; but it still remains a mystery to thousands who have not

had experience in it. Reading poultry books is not practical experience, though they may help very much in many respects. I know nothing that requires practical experience more than poultry-farming, especially if in a large way. It is a business that can soon be picked up if the owner is fond of poultry and starts in the right way. In most cases a poultry-farmer just begins to understand it when his money is gone. He tells his banker, or it may be his friends—he may have over-drawn his bank or borrowed a little from his friends—but they say “No more,” so his business falls to the ground for the want of a little more capital to put him fairly on his legs.

He can see where the mistake was when too late. Most people have to pay dearly for their experience. In many cases where poultry farmers have started they have bought in several hundred stock birds, and, of course, they are purchased from different parts of the country, and often they arrive before proper house accommodation is provided. Some have been well housed, while others have been accustomed to sleep in open sheds, or, may be, in trees. When the new-comers arrive they are put into a house very thickly together. The owner soon discovers a few of them not eating, or, in many cases, the eyes of some of them are entirely closed, and from 300 newly-purchased hens he does not have 300 eggs in three months. This may seem a dark picture to draw ; but, nevertheless, it is a true one. My advice to all who intend to go into poultry-farming as a business is to commence with a few stock hens or pullets if it is in the autumn when starting ; but, if in spring, purchase a few good eggs. It is well in starting not to have

too many, so that they can be well managed. It is by far the safest plan to hatch and rear as many of the stock birds as possible for several reasons. Firstly, it is cheaper; secondly, the owner gradually gets his experience and has more time to study his fowls, and becomes more acquainted with their habits, and soon discovers which breed suits his place best. If little ailments or diseases break out, there is time to attend to them, and the owner gets a knowledge of how to treat the different diseases, or, better still, to watch his poultry so closely that he sees at once when anything is wrong with a bird, and takes it away and tries an experiment on it; and, if taken in time, they are usually well in a few days. Another great advantage is that, in starting in a small way at first, a better market can be found for a little produce than a large quantity, for as the poultry increases they become better known and fresh markets keep opening, while, if there is a large number kept the first year, the owner cannot always find a fair market. This business in every branch requires to be worked gradually. "Practice makes perfect." If a person commences in a small way he is usually successful. It is well to work up a fair stock of poultry, where it can be done, before a large place is taken. If a few small pens of good layers or well-bred birds are collected together there is a good foundation to build upon. It is not a matter so much of how much capital is required, but how it is managed. It is well to have another source of income, if possible, unless there is a good account at the bank. If the owner can use a hammer and saw, much can be saved in building the houses, coops and runs, as these are large items where they have to be bought. If the owner

has not time or cannot build them, it is better to buy the timber and employ a carpenter to make them, and also the gates. It is very easy to put up the posts and wire. If a poultry-man is employed, he should be able to use the hammer and saw fairly well, as if he does not do the building there are always things that require repairing and keeping in repair.

A poultry-man should be industrious, or he will be but little good to his employer, as an extra pen is often required quickly, or a coop made for a sick fowl, or a perch may get broken, or the hinges off a door. All such little things as these get out of repair where a number of poultry are kept. The question arises now, What branch of poultry-keeping pays best? This greatly depends upon which way one's fancy runs. Some have a better knowledge of one branch than another. If there is a good sale for eggs this branch pays, and in fact every branch, if a good market can be secured. One cannot be done well without the other. If fowls are bred for laying eggs for the market only, a number must be bred every year; for instance, if only 100 pullets are required, there must of necessity be about the same of cockerels, and if it is 300 or 400, the young cockerels have to be sold at a very low rate, whereas if they are fattened they make half as much again. If good poultry are bred there will be many cockerels which are of no use for stock purposes; even if they were there would be no purchasers for them all. The fattening coop will come in very useful, as nothing need be sacrificed. If this is not used, the cross-bred cockerels and the wastrels out of the pure, or I might say those which will not do for stock purposes, must

be sold when young to make room for the pullets and younger broods coming on. If poultry-farming is to pay, these little things must be strictly attended to, as farthings make pence, and pence shillings. It becomes one to count the cost before the investment is made. There is no money to waste, especially in these days, when trade is so bad, and everything should be turned to good account. This is put down to the importation of different articles into our country. The importation of grain has considerably lowered the income of farmers. They say it does not pay to grow grain and sell it in the London market. This indeed is too true, and as most of the foreign corn makes about the same as the home-grown there is not much inducement to farmers to grow at home. In poultry and eggs it is different, as one dozen of home-fattened fowls will fetch from 12s. to 18s. more than the same number of foreign. Ducks will fetch from 18s. to £1 10s. per dozen more; Turkeys from £2 to £4 a doz. more; and Geese from £1 10s. to £2 10s. a dozen more than the imported. This, of course, is when they are well fattened. English eggs fetch from 1s. 6d. to 3s. 6d., and often more when sold in the market, and from 5s. to 7s. per hundred retail more than the imported eggs. I have under-estimated rather than over. As I am frequently in the markets, I have good opportunities of seeing how things sell. Is not this an inducement for English farmers to consume their own grain, or a good part of it? Corn is usually fairly cheap, and poultry and eggs make a fair price all the year round, and generally it may be called a ready money trade. I know farmers who make from £40 to £70 a year out of

their poultry in various parts of the country ; but little attention is being paid by many farmers to the enormous sum paid out annually by this country for eggs and poultry alone—over £5,000,000. These figures are rather startling, or ought to be, to the home producers.

I do not say the country should be all poultry farms, but most of the people should be poultry-keepers. The words "poultry farming" are usually taken to represent a place where eggs and poultry alone are produced. Whatever it means it should not be so, as where there are a number of poultry kept there should of necessity be other stock, if everything is to be turned to good account. For instance, the poultry cannot eat all the grass in the summer months. It cannot well be made into hay, if there are a large number of poultry running over it, as, if so, the cattle will not eat it. Then some other stock must be kept. Sheep and horses are the best to keep if they are required to run where there is wire-netting, as cows are apt to upset the wire with their horns. Then if sheep are kept, a few mangold wurtzel or turnips should be grown to help them through the winter months. The same for the fowls, as they should have roots of some kind in frosty weather if cabbages cannot be provided. Where there is a large number of poultry, there ought to be cows kept, as the skim milk is so good for fattening purposes, rearing young chickens, and for laying hens. If a farm is taken with the intention of making it a poultry farm, fruit trees should be planted of the best kind. When worked in this way, there is what may be called three crops growing at once, and yet one does not interfere with the other, but the contrary. The

trees shelter the poultry from the hot sun, and the fowls manure the ground, thus improving it. Sheep or young calves may be kept in the orchard where the young fruit trees are planted. When worked thus it is not at all likely to fail, whereas, where only poultry are kept, the grass runs to seed and then dies. Then all through the autumn and winter this long grass is trodden down by the fowls. It is not only waste, but it is not so good for the fowls, as, while they are searching after insects on a wet and dewy morning, their plumage gets very wet, whereas if the grass were eaten down by cattle, the poultry would eat a large quantity of it—as then it is young, tender, and continually growing—and be able to find the insects better. Poultry will pay if managed properly, either in a small or large way, but the former the best. A large farm will pay if managed in a practical way, but not if poultry only are kept. I know many who get a good living by breeding ducks only, and yet have not two acres of ground. They pay best when not too many are kept, as they get better attention. If one hundred laying hens are kept, and from three to four hundred chickens are reared, they will clear from £50 to £100 in a year, but this does not imply that if double the number are kept, the profit will be doubled. It is usually *vice versa*. Poultry should be kept much more by those who own land and not too many in one place. Where poultry farmers have made the mistake is by commencing with little or no experience. Several pamphlets and books issued years ago were very misleading to the public. One stated that eggs could be produced for 1d. a dozen, and fowls 3d. a lb.; another

that the total on each hen is 16s. 6d. clear profit. It is all worked out in figures nicely. I need not say how misleading these glowing accounts are. I do not say that half-a-dozen, or even ten might not give a profit of 16s. 6d. each, or even £1, if the eggs can be disposed of at a good price, and the greater number of them produced in the winter months. Poultry profits are not like those in most other businesses—the more business done, the greater profit. It is usually the other way about; the less poultry the greater comparatively the returns. I have known thirty laying hens pay £29 clear profit in a year; while a neighbour of the same person had over 300, and lost about £30 a year. It is the management. I find nothing else in the way of live stock pay like poultry. Before I published the first edition of my book I made my poultry pay over 360 to 600 per cent. per annum, one year considerably over, but I put nothing down for labour and rent. I do not make them pay 300 per cent. now that I keep a large number, but they pay very well. They require the owner's personal supervision, with a good practical experience, and then they cannot well fail.

I have made arrangements in different parts of the country to have fowls bred and reared for me from my own stock, although I farm from two to three hundred acres. I introduce fresh blood in each breed every year.

Corn and land are both cheap, and farmers and cottagers ought to go in for poultry more than they do. Poultry and new-laid eggs should become a regular food and not merely luxuries.



FATTENING FOWLS.

Disappointment in young birds for table overcome by fattening—
Fattening coops and food—Skim milk and fat for fattening fowls—
Cramming by hand and by machine—Hints for helping fattening
fowls—Killing.

FATTENING or cramming fowls is a business comparatively few understand, though they may be acquainted with other branches of poultry-keeping. Owners of young fowls are usually dissatisfied with their young cockerels when they are killed, as their own fowls do not eat so tender as some that have been bought from the poulterer. From 13 to 19 days is long enough to have them up, but as a rule very young chickens are not in the coop more than 16 days. Big fowls when being fattened for Christmas are usually kept shut up for three weeks. The best meal to use is ground oats and a little barley meal with it. When ground oats cannot be obtained it is well to buy some fine oatmeal and mix it with the barley meal. French buckwheat, ground, is a very fine meal for fattening. A little barley and pea meal may also be mixed with it. Oatmeal or ground oats mixed with skim milk

makes the flesh whiter and more tender than anything else. The latter is rather difficult to obtain in some parts of the country. The fowls should be put in a coop on small round bars. They should be from 1 to $1\frac{1}{4}$ inches apart, and always put longways, so that the poultry can stand and eat out of the troughs. The bars in front of coop should be about two inches apart. One coop, three feet long and about 16 inches wide, is large enough for six fowls. It should be 18 inches high, otherwise the young cockerels will injure their combs when crowing, and cannot stretch themselves up. For the biggest fowls it is well to have the coop 21 inches high. Where small chickens are fattening a smaller coop will do. The fattening coops are best kept in a shed or outhouse where it is a little dark. The trough they eat out of should be fastened outside their coops, about four inches higher than the bars they stand upon, otherwise they waste the food. The trough should be made like a pig trough, narrow at the bottom and wide at the top, and should be from five to six inches across the top. The food ought to be mixed up soft, so that it does not cling together when the fowls peck it up. In this way they cannot peck up much at once, so they peck away as fast as they can. In this way one induces the other to eat. They do the best where two or more pens are together, as they eat one against the other. Their food should not all be put in the trough at once, but a little at a time, then they clear it up and look for more. Nothing sets fowls against their food more than giving them too much at once, especially when put up to fatten, as they do not have any exercise to give them an appetite.

They should not have a particle of food left in their troughs. It is well to let two or three fowls come into the house where the others are penned up to fatten, to peck up the few odd pieces that may have fallen down. This prevents any waste, and also induces the penned birds to clear up their food. If the food is mixed with hot water in the winter and spring they fatten much faster. Skim milk is the best where it can be obtained. The last eight or nine days they should have suet or rough fat mixed in their food. An ordinary fowl should have from $\frac{1}{2}$ oz. to $\frac{3}{4}$ oz. in a day, but to large birds more must be given.

To make the flesh of old hens tender, they should be given a good deal of fat for three weeks before killing. If they are boiled gradually they cannot be distinguished from young fowls when fed in this way. If for market, it is best to cram them the last week, as a fat young fowl usually makes 6d. or 9d. more than one the same weight not fat. If crammed by hand the meal should be made into pellets from $1\frac{1}{2}$ to 2 inches long and dip them into milk or warm fat, then they slip down easier. They should be worked down with the thumb and finger; if not, they are apt to get lodged at the bottom of the neck. When they have to be crammed by hand it is well to let them eat as much as they will first, and then give them a few pellets just so that their crop is well filled. They should have a little fine grit in their food about twice a week, but do not require any water to drink. After fowls have been shut up about four or five days they occasionally lose their appetite. When this is the case use a little fattening powder; it helps the fowls when put up to fatten. When fowls are required to be large, weighing from

8 to 10 lbs., they require three weeks fattening, with very generous treatment ; if not, they fall back the last few days. When first put up they should be allowed a little boiled corn three or four times a week, and a good supply of green food cut fine helps them very much, though the Surrey fatteners do not trouble about this. They also require cramming the last fortnight. When there are many fowls fattening it is best to use a machine. This saves time, as with the improved machines a man can do 18 to 20 dozen in an hour nicely. Cramming machines can be procured from Neaves, Sussex; Hearson, London; and from Every, Lewes.

Fowls should always be killed fasting; if not, they usually turn a bad colour. There are different modes of killing. Some just break their necks and do not let the blood run out of them; but it remains in their necks (draining from the body into the neck). I like to stun them and then put the knife up into the brain. In this way they bleed well, and it gives them no pain, as when they are stunned they do not feel it. When there are only a few to kill at a time it is best to have a nail or nails knocked into a wall or beam to hang the fowls on. Their legs should be tied, and take hold of these in one hand and the wings in the other; hit them hard against a post and hang them on a nail at once, and run the knife into the brain through the inside of the mouth, passing it through the roof as quickly as possible. Another way is to dislocate the neck. This is easily done by holding the fowl's head between the thumb and finger; the back of the head should press against the operator's thumb, and with the fingers bring the neck right back and it is put out in a second, this is the Surrey way of killing.

The fowl should be hung head downwards to allow the blood to run from the body ; if not, the flesh will be dark.

There are many farmers, particularly in the Midland Counties, who never think of putting the birds in a coop to fatten, but shut them in a pig-sty or out-building, and put a lot of food in a trough so that they can run to it when they like. This is wrong. When fowls are shut up in such places they ought to be fed carefully, so that they clear up every particle of food. A little fattening powder should also be mixed with it about three times a week, as very often when they are shut up for a few days they waste instead of putting on fat. The place they are shut in should be well ventilated, and about 18 inches from the ground, with straw underneath to keep them clean. Too many should not be put in one place. What corn they have should be boiled, and boiled maize and barley should be given three times a week for the last meal. As a rule fowls do not care about barley when it is boiled, but if a little fat is put into the saucepan with a piece of salt they will eat the barley readily. They like boiled wheat better than anything, but it is not so fattening as the other grains.



PREPARING BIRDS FOR THE SHOW PEN.

Novices, careless and disappointed—Untrained birds: their beauties not perceptible, and consequently overlooked by judges—Washing the birds—The care of cockereis after returning from showing.

THERE are many amateurs who show birds at exhibitions and are very much surprised that they do not win prizes, especially when the birds are bought, and those who are fortunate enough to buy them win all through the country with the same birds.

The cause of this is explained in a very few words. Poultry are often shown, and in many cases are better than those which win, yet they do not get even a card when shown by a novice. This refers to some breeds more than others. The finishing touch, or the preparation for the show pen, is a very important point and goes a long way towards the success of the birds, and if they are to win they must be in prime condition.

For instance, Plymouth Rocks are often picked up out of the run by a novice, and sent direct to the exhibition before the legs have even been washed, whilst others in the same class will not only have their legs washed, but every

particle of dirt is taken carefully from under the scales, and their legs are nicely polished.

Some breeds, of course, want preparing quite differently to others, but all varieties ought to be put in a large coop for a few days before they are sent away for the first time, if not, they are so wild when the judge goes round to award the prizes, that it is impossible to see the proper shape, as they will crouch up in a corner, and very often the male birds will put their wings over the saddle feathers. After they have been standing in the show pen a day or so they get tamed down, and in many cases stand right before the winners in merit, though perhaps they have not got a card, then the exhibitor cries 'shame' on the judging, but in reality it is not the judge's fault at all, but the exhibitor's.

Birds with yellow and white legs should have the latter washed very carefully, especially Plymouth Rocks, Leghorns, Wyandottes, Dorkings and Scotch Greys, and Buff and White Orpingtons. After they are scrubbed with a little soap and water and wiped dry, it is well to get what is termed by jewellers a watch cleaner, that is a small piece of boxwood, as the dirt can then easily be got from under the scales, just as it is from a person's finger nail. After every particle of dirt is got out, the legs should have another scrub with soap and water, and be wiped perfectly dry, then have a small piece of vaseline rubbed on. After this they should be rubbed hard with a soft piece of cloth, an old silk handkerchief will do best, that leaves a nice bright gloss on the legs, no matter whether they are white, yellow, or black. The comb, face, and wattles should have a little vaseline and salad oil rubbed in, then carefully

wiped off, as much as possible, with a soft cloth. This leaves a brilliant red, which lasts for two or three days, in fact the bird does not look like the same. Large coops should be provided for birds intended for show, standing about three feet from the ground, to put them in a few days before they are sent to the exhibition, and the owner or attendant should put his hand or a stick in and stroke the bird down. This gets them accustomed to the pen, and causes them to become tame. It is well also to get them used to eating out of the hand, then when the judge goes round giving the awards, the birds, instead of being frightened, are more inclined to walk up to him and show themselves off to the best advantage.

Game fowls should always be fed from the top of a wire pen or coop, so as to make them stretch themselves out, as they ought always to stand in a very reachy position.

Breeds such as Leghorns, Minorcas, Hamburgs, Spanish, Andalusians, Black and White Rose-Combed Bantams, and all those which have white ear-lobes should always have a piece of canvas put over the front of the coop, so as to make it dark, as the earlobes become very much whiter and improved by being excluded from the light, and their combs grow much larger if they are fed on a little meat and hemp seed. The white ear-lobes should be just rubbed down carefully with the thumb, to prevent any wrinkles coming in them.

Birds with black legs should have them just wiped over, or if there is any dirt on them, they should be washed and wiped carefully, then a little vaseline rubbed on, just in the same way as it is on the birds with white or yellow legs.

The latter should then be wiped and polished. These little things are not what is called "faking the birds up," but merely getting them into good exhibition form. Unless they are prepared in this way they stand but little chance of winning.

Care should always be taken not to put a bird in the dark, or shaded too much from the light when it is a breed with a small comb, such as Orpingtons, Langshans, Plymouth Rocks, &c., if so, it is apt to make them grow too large, which may be a disqualification in the show-pen.

Black fowls do not require washing for the show-pen, but it is well just to wash their feet and legs. Houdans should be washed throughout, although many have neglected this. A little soda and soap may be put in the water. If they are rather dirty, a nail-brush should be used. Hold the feathers on the left hand, and then they can be brushed. It is well to pour a little blue-water over them gently; then use a sponge to get the water out as much as possible; then a wash-leather, and rub them. Always take care that the feathers are rubbed the same way as they lie; finish them with a dry towel. The white, buff, or light fowls of any breed which really require washing to the skin, must be done as follows:—There should be a tub or bath of warm water about five to seven inches deep, and the fowl should stand in the water, and well soak the feathers (a little soap—Spratt's specially prepared is best—and soda in the same). After they have been scrubbed, the soap should be well rinsed out of them, they should be dipped in blue-water, which should have the chill off, this should be almost as blue as that which linen is steeped in to make it white.

After this is finished they should be dried as described. Give them two roup pills; this usually prevents them from catching cold. The room should be warm, and the birds should be put in a covered basket and set by the fire. They should always be washed two days before being sent to the show; if not, they may not be quite dry. When dry, it is well to brush the feathers carefully with a clothes brush, each feather the way it lies, and then with a fine hat-brush; this brings each feather into its natural state. The fluff feathers should be held in the left hand, then they can be spread out and brushed properly. After the comb, face, and wattles are washed, they should have a little vaseline and salad oil rubbed on them, if not they are liable to crack or look very pale. I have known them to chap. When the birds are in the pen, they should have a good supply of grit, green food, and water. When sent to a show, it is well to give a Roup Pill, as this often prevents them from taking a cold, and gives them a good appetite when they arrive at the other end. When cockerels return from the show pen which have been accustomed to run with the others they should not be put with them, as they are apt to fight and injure themselves.



DISEASES.

Poultry subject to many diseases—Ignorance of many people respecting this fact and the result of same—"A stitch in time saves nine"—Warm comfortable houses the best preventive of disease—Roup—Liver Disease—Leg-Weakness—Gapes—Cramp—Egg-Eating—Egg-Bound—Crop-Bound—Soft Eggs—Comb Disease—Feather-Eating—Consumption—Diarrhœa and Dysentery—Dropsy in the Abdomen—Inflammation of the Lungs—Vermin—Bumble Feet in Fowls.

POULTRY are subject to many diseases, and, as a rule, are much neglected when unwell, as they get abuse from their own companions, and the owner often says they must take their chance, live or die, and, therefore, the poor sick bird or birds are left with the healthy, and driven about and pecked till they pine and die unhelped and uncared for.

All poultry-keepers should be acquainted with the different diseases fowls are liable to; if not needed, so much the better, while if the owner has sick birds it will often save pain to the fowls and loss to himself, as, if most diseases are treated at once, many valuable fowls may be soon and easily cured that would die if left alone, and also prevent the disease from spreading to the healthy fowls.

"A stitch in time saves nine." Just so with the sick fowls. If the first is saved there is little doubt about the remaining ones.

Where a large number of poultry are kept it is well to have a small house by itself, so as to isolate the sick bird at once, as most diseases are infectious. Any kind of house will do that is clean, free from draughts, and well ventilated at the top. The best thing for the floor is chaff or moss-peat, the latter having the preference, as it is a disinfectant, and also keeps the fowls warm and dry, and prevents any excrement from sticking to the feathers.

The house is better not heated, as diseases are often traced to artificially-warmed houses. Poultry should be kept as much as possible in one temperature, and, therefore, if the house is heated, the runs should correspond, being made as warm and snug as possible. This may appear unnecessary, but to those who have tried and studied it it remains a fact; for when fowls come out of a warm house on a cold morning they stick about close together and look miserable, while if it is a mild morning, or a warm run, they will be busy picking and scratching about and enjoying themselves. Fowls roosting out of doors do not feel the cold nearly so much, and also keep free from disease; but if roosting in a warm house the cold nips them very much, and they mope about and refuse to eat, which checks the growth of the chickens and the production of eggs in the older birds, and brings on diseases, and more especially, cramp and roup.

One of the most important things to keep poultry in health is to keep their houses and runs perfectly clean.

People who do not care for their fowls in this way often wonder why their birds do not lay, but the wonder is they live at all, and probably the only thing that saves their lives is the plentiful ventilation and pure air they get. In the country, about two people out of five keep their poultry in this way, but in the town it is different, as the sanitary authorities compel people to keep their birds clean, or otherwise they would be very offensive in a crowded neighbourhood. The houses should be limewashed at least once or twice a year.

I do not intend in this little work to go very scientifically into the matter of diseases, as it would take up too much space to fully describe all diseases fowls are subject to, but only to mention the most common, and to give the symptoms, and remedies I have found most efficacious in a simple way, so that even boys or girls may understand them, and treat their own fowls in a similar manner.

ROUP.

This disease is usually brought on by cold or a sudden chill of the blood, very hot days and cold nights, or sitting in a draught when the fowls have not been used to it, or sleeping out of doors one night and in a nice warm house the next, getting wet and cold and then sitting in a draught, or the house closed up with a number of birds in it without sufficient ventilation will bring on cold or roup. More birds get roup from the latter cause than from all the other causes put together. When fowls are accustomed to sleep in trees and are put direct into a warm house, or put in a covered basket and sent on a railway journey,

especially when sent to a show after sleeping out of doors, they are almost sure to return with roup.

When poultry are travelling by rail and are allowed to stand for hours on a draughty platform, especially when coming home from a show, after having been taken out of a crowded place, where it has been very hot, and the railway officials allow them to stand for hours on the platform in the middle of the night, they are sure to have roup. I have mentioned a few causes of this disease. It comes in three different forms. The first symptoms appear quite distinct from each other.

When a fowl first takes cold and the system is in good order, the first symptom is a little running at the nostrils. At first the discharge is clear water, but if neglected it usually ends in roup. If not taken in time and treated properly the fowl soon begins to cough and sneeze. The running from the nostrils may last for a long time. I have known this to continue for three months and not lay the birds up. This discharge from the nostrils goes harder with chickens than with old hens, and if they do not get good attention it stops their growth. When the first symptoms appear they should be examined to see if the mouth and throat are free from white spots or ulcers, and with no rattling noise in the throat. Their nostrils should be squeezed so as to clear out all the mucus, by putting the fore-finger in the roof of the mouth, and the thumb over the nostrils. If the fore-finger is not put in the roof of the mouth the mucus may partly stop the breathing as it is pressed inwards instead of outwards. Their nostrils afterwards should be washed with a little

alum and water. It is well to dip a feather in the alum solution, and put down the fowl's throat. If it is a little sore or inflamed, the alum will do it good. Give one heaped-up teaspoonful of Roup Powder to nine hens; chickens proportionately. The powder should be given in the morning meal. If they object to eat it then, mix it with about two handfuls of meal and throw it down, a small quantity at a time, which they will run after and swallow greedily at once. If they refuse to eat it when given in this way they must have pills given to them, as will be seen further on. As a rule there is no difficulty in getting them to take it. When there is only a running at the nostrils, and no offensive smell, they may be allowed to run with the other fowls without any danger of them infecting the others. If this cold is neglected there is a very offensive smell from the fowl's breath, and a discharge from the nostrils, dried on all round the outside, often preventing it from breathing, also thick saliva in the mouth, and if this is not stopped it soon turns to a thick mucus, and corrodes very fast, spreads down the throat, and causes the fowl to breathe very hard, and soon the worst symptoms of diphtheric roup are fully developed. In very bad cases there is a thick cheesy matter forms on the tongue, mouth, and down the throat. It grows very fast, so much so in bad cases that the tongue protrudes from the mouth, and the bird appears to be swallowing all the time. In some cases the mouth is clear to all appearance, and the fowls look quite healthy and eat well up to the hour of their death. The only symptoms which appear are, the birds open their mouths to breathe, and if watched may be seen to try to

throw something up from their throats, but in vain. In such a case the fowl should be caught (a second person usually is required to hold its mouth open), the opening of the trachea (that is the windpipe) should be worked up and down from the outside by the thumb and finger. Hold the fowl's mouth wide open, if not the opening cannot be seen, and hold the head quite still for a few seconds, and when the fowl breathes the opening of the windpipe can be seen. Then dip a feather in some Roup lotion. Do not strip the feather, and well saturate it with the lotion. It should be a small pointed feather, plucked from a fowl's wing. A tail feather will not answer this purpose. The opening of the pipe is small, so care must be taken to put the feather right down the windpipe and not the throat or swallow. It may be put from two to four inches down the pipe. Give two or three twists round and draw it out slowly, and in most cases there will be little pieces of fungus adhering to the feather, a kind of whitish-yellow matter. It looks like crumbs of cheese.

In some cases it can be seen just at the top of the wind pipe ; sometimes it is half as large as a small pea, and in other cases it may not be larger than a pin's head, but in all cases it should be well saturated with the lotion with another feather. Then use the quill end of the same to rub it off. In most cases it will peel off very easily ; if not it will the next morning. If a sharp instrument is used it may injure the fowl if it makes a slight struggle. It usually bleeds a little when removed. In some cases it grows again ; if so, treat as before, and it will gradually get better. Always take care to burn the feather which has been used.

When the lotion has been used for a fowl's throat it is well afterwards to pour down half-a-teaspoonful of salad oil out of a small bottle, which saves time. Sometimes this scrofulous matter forms on the side of the mouth ; occasionally it forces the mouth out so that from the outside it looks like a swelling. The lotion should be used in the same way, but it will require more of it. Sometimes it is necessary for a few drops to be dropped on or in, as in some cases when the fungus is removed there is a hole. In this case do not omit the salad oil, as stated previously. When the disease comes in the last two forms I have mentioned, or in a similar way, the fowls do not always have a discharge from the nostrils. It sometimes stops their laying, but does not appear to injure their health, unless in very bad cases. If neglected, it usually ends in death to the fowls.

What is called canker in pigeons is much the same thing, and can be cured in the same way. If birds are not valuable, when their mouths are filled up with fungus, it is best to kill and bury at once, the first loss is best. When birds have been penned up closely in coops in the London and other markets, they are the birds which usually spread the disease in poultry yards. Roup shows itself in quite a different form at times, viz, with a swelling in the face and round the eye. The first symptom is usually a little white foam round the eye, and the fowl will frequently scratch her eye with her toe nail. Sometimes before anything else is visible these symptoms will appear ; at times the fowl's nostrils are quite dry, and at others there is a slight discharge with an offensive smell. Sometimes in the course

of 12 hours the fowl's face has swollen to the extent that the eye is completely closed up. The face should be bathed at once with very warm water, using a sponge or piece of flannel. Bathe it for a short time, from two to five minutes, according to the condition. In all cases wipe the face quite dry; if not, more harm than good will be done, as the fowl is apt to take a fresh cold. A little alum may be put in the water used for bathing the fowl's face with advantage. Painting with iodine directly after bathing is an excellent thing, as it draws the inflammation out very quickly. They must be very bad cases that the last remedy does not cure. Bathe twice a day. The fowls should be out of the draught and yet have plenty of air in a fairly warm place, but not a heated one, unless they are very ill, when warmth is required. When they are recovering they should be hardened off a little at a time, particularly in the cold weather, first put in a snug outhouse, then in an open shed. The first time they are allowed to go in a pen should be in the middle of the day; if not they may take cold again. In some instances the swelling of the face does not go down, or only partly so, but becomes much harder. In such cases as these there is a hard, cheesy lump formed under the skin, which should be lanced carefully and squeezed, one finger being inside the fowl's mouth. Seven out of ten can be cured in this way. Sometimes it settles under the ball of the eye, in such cases the bird loses its sight.

Roup comes in three different forms, and whichever it comes in it can usually be cured. My advice is if the bird is not valuable kill it at once, or isolate the bird from the

others, especially if there are many kept. Treat the affected bird with roup powder, and add camphor to the water of the unaffected birds. If the fowls are free from liver disease, and inflammation can be kept from the lungs, not five in 100 will die if treated properly. It is always safe to give a spoonful of salad oil when a bird shows any of the symptoms mentioned.

When roup or any contagious disease breaks out, it is always well to give one teaspoonful of Epsom salts to every 10 or 12 birds, but if very bad, one teaspoonful to eight is not too much. It opens the pores of the skin, and they are liable to take cold, so that roup powder should be used at the same time, that will counteract it and prevents them taking cold.

If the bird is breathing hard, give a teaspoonful of salad oil, this may ease her considerably. If the rattling in the throat is very bad and the breathing very hard, the lungs should be painted with iodine. There is a place free from feathers just under each wing, where the lungs lie, and this spot should be painted over. The exact place to apply the iodine can easily be detected if the bird is watched as it breathes, as the movement of the lungs can be seen if the wings are held up. The iodine will soon give the bird relief, and ease the breathing very much. Stewed linseed is very strengthening to a sick bird. This should be put in cold water, and put over a slow fire, so that it does not boil too fast, but just simmer for half-an-hour. If a little lemon juice can be added, so much the better. Give the linseed as warm as the fowl can take it. A hen may take from three to six teaspoonfuls; a cock seven to ten. If

they have more it will not hurt them. The bird should be held under the left arm, in a position so that the feet cannot have any bearing; otherwise the linseed cannot easily be given; or the bird can be held between the operator's legs, with the fowl's body resting on its thighs, the legs hanging down, so that they cannot catch against anything; give two roup pills, and fifteen birds out of twenty will be well in from three to seven days, if treated when the first symptoms appear. It is always the best to go into the fowl-house in the evening, especially in the autumn and winter months, just to see whether the fowls are all right. Should the fowls be blind in both eyes, they ought to have a little water poured down their throats with a teaspoon, as they cannot see to drink. Even had cases soon begin to recover if there is nothing but roup in the system. If they only partly recover, and do not eat after fifteen or twenty-one days' treatment, they usually have liver disease, or a tumour, for which there is no cure. I usually kill and bury them at once. If they are valuable fowls, it is well to give them two teaspoonfuls of cod liver oil each day.

It is well for those who are interested in poultry to try these experiments on common fowls, if time will permit, and especially if they think of keeping valuable poultry; if not, killing the first is usually cheapest in the end, especially if there are many birds left. The first symptoms of roup in young chickens are usually a slight running at the nostrils, roughness of the plumage, drooping of the wings, and loss of appetite. They usually drink a great deal of water, which makes them much worse, as it

frequently gives them diarrhoea. It is well to put a small ball of camphor in the drinking-water, only allowing them about half the usual quantity for two or three days ; then discontinue water altogether. If it is hot weather soak the corn in water. Use soft meal in the morning with roup powder in it, and in ten or fourteen days the chickens will be in a healthy state again. When the throat becomes sore, chickens usually open their mouth very much, and people put it down as gapes. When there is a sign of gapes discontinue the water, and give sharp grit, soft food with roup powder mixed in, and boil the corn for a week or ten days. These simple remedies will work wonders, bringing health and vigour to the chickens very quickly. Under any circumstances do not overcrowd chickens, and give them ventilation, but not draught.

LIVER DISEASE.

There are many fowls suffer and die from this complaint, while their owners are quite unaware of the cause of death, and often put it down to consumption or cramp, unless they happen to open the bird and find an enlarged liver.

Fowls in confinement appear most liable to this complaint, and this is often for want of some necessities, such as green food, and sharp grit, the latter being of great importance.

When birds show symptoms of liver disease they should be killed at once, as this disease is incurable. It is only waste of time and money to try to patch them up. Some writers on poultry call it "going light," which in reality it is, as the flesh wastes away from the body. Those

birds that are all right should have Roup Powders given them for a week or ten days, as this will usually check any symptoms of disease, and bring the system into good working order.

The symptoms of this disease are rather difficult to describe. In many cases there is a lack of gloss on plumage; the feathers look rough, and the fowls seem to have lost all energy. First thing in the morning they go to the water and drink a quantity. They eat but little soft food; many of them will not touch it, and usually eat a great deal of hard corn, especially maize; more than a healthy bird. If allowed to have it, they will eat this until the hour of their death. There is usually a yellow cast about the face, especially round their eyes. Their face appears sunken in, especially under the eye. It can be noticed better if placed beside a healthy bird. The eye is rather dull. There is often a peculiarity in their walk, appearing as though they were rather stiff, and afraid to shake their body. If they are made to run, they usually go a little lame on one leg. It is the heavier varieties which are more subject to liver disease. Their food does not digest, and their crops are seldom empty. There are several causes for this complaint. In-breeding in the heavy breeds is conducive to liver disease. An insufficient supply of sharp grit is a most frequent cause of liver trouble. My experience during the past few years is that where the birds are kept short of sharp grit there have been most cases of liver disease. I have watched this carefully, and as I have delivered from 100 to 140 lectures each year for the past four years, and have visited some thousands of

farmers and cottagers in almost every county in England, I have had a good opportunity of judging this. People are not so careful with their stock birds as they ought to be. Fowls cannot keep healthy long unless they are supplied with sharp grit. Cayenne pepper should be avoided. The liver is usually the first organ to suffer. Sometimes it brings on consumption and roup. When the liver is not acting properly, the fowl is much more susceptible to other diseases, as when this is out of order there is a bad circulation of the blood.

When liver disease is first coming on in hens and they are already laying, a certain portion of the disease, at least, goes into the eggs. When a diseased cow is giving milk, the disease is liable to be transmitted to those who partake of the milk. It is the same when a hen which has liver disease lays eggs. While she is laying she keeps fairly well in herself, but the last few eggs she lays usually smell musty or strong, and if they were boiled an adult person would be able to detect them at once, because they would smell bad and taste worse. A boiled egg should be examined by smelling before given to a child, because as a rule, whether good or bad, the latter will eat it. I have known hens, which have liver disease coming on, lay one shelled egg and one partly-shelled egg; these eggs I have opened carefully and the stench has been very bad.

During the past few years I have called upon many scores of poultry keepers in the Autumn, particularly farmers. Many of the latter have complained of losing their new laid egg customers on account of the eggs being bad, though in each case the farmers were sure they were

new laid. In one instance a farmer had seven eggs cooked for breakfast and had not been able to eat two or three out of that number, yet they were not three days old. From that very farmer's yard I picked out fifty hens with liver disease: I killed a number of them to show the farmer the state of their livers. The lightest weighed four ounces, and several turned the scale at eight and nine ounces each. I took one liver from a fowl weighing fourteen ounces. If the bird is healthy the liver should not go more than $1\frac{3}{4}$ or $2\frac{3}{4}$ ounces.

It is very important that those who can do so, should keep a pen for themselves, so as to have eggs from their own birds. Eggs are food to human beings, but those laid by liver-diseased hens are certainly not fit to eat. Our medical men tell us an egg which weighs $2\frac{1}{4}$ ounces contains as much nutriment as six ounces of mutton, without any bone. Then again, liver disease is contagious, particularly if the fowl house is not properly ventilated. If one bird has liver disease in a poultry house others are sure to follow, therefore it is better to clear them off when the first symptoms show themselves. My experience is, an insufficient supply of sharp grit and too much maize, or Indian corn, will bring on liver disease, and if the poultry house is badly ventilated, that will help to spread it amongst the healthy birds. I am often asked if the flesh of liver-diseased fowls, when the complaint is first coming on, is good to eat. I should not like to eat it myself, but it would not be so likely to injure a person as eating eggs laid by liver-diseased birds. The liver is not only rotten, but usually full of white spots, some of which are as large as

a pea, but in the early stages these small spots are no larger than the point of a pin. In most cases the liver is much paler than it should be when this disease sets in.

Another cause of liver disease is over-feeding on too much maize. This should be avoided ; a little does not hurt them, but feeding heavily on it is ruinous to the liver, especially when the fowls are confined in runs, and do not get sufficient exercise. Sudden changes in the weather or temperature of houses upset the liver very much ; such as roosting in a warm house one night and in a tree the next, or anywhere causing a sudden change. This brings on congestion of the liver. The bird should be kept in one temperature as much as possible. When fowls have the disease badly, their excrements are very yellow. In bad cases, the fowls waste away, so there is scarcely anything of them left, with the exception of skin and bone.

There are medicines advertised for fowls that are going light, but it is only a waste of money, trouble and time to buy and administer these advertised remedies, it is always best to kill them at once and save them the pain and the owner the trouble and expense, and the risk of spreading the disease.

Liver-diseased birds can often be detected when they leave off laying at the end of the summer or beginning of autumn, as soon as they begin to shed their feathers, as the disease spreads rapidly when they leave off laying. Sometimes they linger on for months, at other times they die quickly. In very bad cases they do not get their new plumage in the following autumn, but when they shed their feathers early, say at the end of July, or during August,

and early in September, they may get their new plumage, and live all the winter, but never lay an egg. Such birds can easily be detected on a cold, piercing day, because their combs will turn black, and they do not scratch round the stack yards and other places as the healthy birds do. When they are getting bad they will often go to roost in the middle of the afternoon.

A preventive of liver disease is fresh blood every year from healthy stock ; plenty of sharp grit ; well ventilated poultry houses ; no Indian corn in the summer—the hens may have a little when sitting ; a good supply of green food, particularly when the birds are kept in confinement. Avoid over-crowding in the poultry-houses at night, and see the latter are kept very clean. Fowls are easily managed if a person takes an interest in them.

LEG-WEAKNESS.

Sometimes young cockerels that have grown quicker than the others are taken with this affection, the symptoms of which are much the same as cramp, viz., tumbling over when attempting to stand up, dropping down quickly and frequently, sitting down to eat their food, as though they had no strength. The best remedy is to feed on stimulating food, such as meat, bone meal, &c., and to give a tonic; roup powder is the best I know of. The birds should not be allowed to roost, but should be put on straw, hay, moss-peat or chaff for a time. They are best killed for table and not kept for stock birds. When young cockerels show leg-weakness for a long time together they should never be bred from, as it is sometimes gout in their limbs that causes it.

GAPES.

This disease is mostly confined to young chickens and pheasants, and requires different treatment from any other, as it consists of small red worms in the windpipe, which causes the chickens to gape and run backwards, coughing at the same time, and if some remedy is not applied immediately they live but a very short time. There are many thousands perish annually of this disease, more especially among farmers, and I have known as many as 300 to 500 die on one farm in a year. How the worms get in the throat is a mystery, but some scientific writers tell us it is from eggs deposited by a kind of tick often found on chickens; this may be possible, but not probable, it is also very plain to me that chickens reared in the country appear more liable to this disease than those in towns, and one reason is that country chickens often drink dirty, stagnant water, particularly in the farmyards, while those in towns generally get clean fresh water. Some few years ago I tried the experiment of giving a few chickens water from a tub that had stood some time, and found that many of them had gapes, while those with fresh water were quite free. I may also mention that there are many wild birds in the country die from this disease.

These worms may be extracted from the chicken's throat by putting the feather out of a chicken's wing down the windpipe. When withdrawn, after being properly twisted round two or three times, there will sometimes be as many as half-a-dozen worms on the end of it. Occasionally when the feather is drawn out of the windpipe the operator

will often think there is blood on the feather, when it is really the red worms smashed up by the feather.

Another good remedy is to give the chickens a few small pieces of camphor, about the size of a pea, at intervals, or, if many are attacked at once, they should be put in a box with a little common lime, and when the box is shaken the chickens will flutter about and breathe the lime dust, which is an immediate cure, as they inhale the dust, cough and throw the worms up. This is the simplest method I know, and much easier than the other. They should be left in about five minutes, and after shaking the box the lid should be left open a little way to observe them, so that if any appear overcome they may be taken out and relieved, which may easily be done by blowing down the throat, when they will soon recover, but if they are allowed to go too far before any remedy is tried nothing will cure. If the eyes are closed they should be opened and gently wiped (not washed) with a silk handkerchief. It is always best to feed on meal only for a day or two after any operation.

A preventive is better than a cure, and I find a little poultry powder in the soft food once a day when the chickens are from four days to a week old until they are two months old, is an excellent preventive for chickens having gapes.

The use of camphor is most effectual in checking diseases. It is worth a guinea an ounce to poultry-keepers. There would not be half the disease among chickens, turkeys, and pheasants there now is, if it were used in the water. It should be put in the drinking vessels. A piece

as large as a walnut will last twenty chickens from three weeks to a month, if removed every day after the water is emptied and replaced in the clean water it dissolves very slowly. Every time the water is changed the piece of camphor must be replaced in the drinking vessel. The camphor makes the water taste strong and this checks the chickens and keeps them from drinking too much, which is an excellent thing in cases of disease.

CRAMP.

Early chickens are often subject to cramp in the cold weather, when from one to six weeks old. The result is that the toes are contracted, and the chickens fall down in trying to walk, and shuffle about on the joints of the legs. When this is the case the foot and leg should be rubbed with turpentine, after which a little vaseline should be well rubbed in, and a piece of stick should be obtained with three prongs, the same shape as the chicken's foot. The toes should be bound round with cotton wadding, and each toe strapped with wool or worsted separately to a prong of the stick, the chicken being put in a box on wool or flannel, and kept warm for a few hours. If very bad they should be kept away from the hen for a few days, but should be put under at night, being removed first thing in the morning and replaced in the box, which should be set against the fire. When the wood cannot be obtained, get a piece of cardboard. Wrap the whole of the leg and each toe in cotton wool, place the latter on the cardboard, and sew them separately on to it with worsted, putting the stitches over the toe and through

the cardboard, so that they cannot be moved. I have known them get quite cured if taken in time in from 26 to 36 hours.

Some chickens never get over cramp, but are always shaky on their feet. These should be killed for table, and not kept for stock birds. Cramp in chickens is usually caused by their being kept on hard floors, either boards or flagstones. It comes on through imperfect circulation, which causes the blood to get chilled as it passes through the legs and feet, hence attacking these points first.

The symptoms in laying hens are : they sit down on the ground ; their feathers are rough just across the rump, *i.e.*, at the top of the back. When the hen is disturbed she holds her wings out, flutters, and falls over. She appears to have no use of her legs and feet. She is still very red in comb, bright in the eye, eats well, and is often in full lay.

They are very subject to cramp in the winter and spring months, and these are usually the best layers. They use up carbon too fast, and the blood gets chilled, and does not circulate in their legs properly. Their legs are quite cold, and the hens lose all the use of them, and cannot stand upon their feet. This so very often happens to good layers ; it causes them to lay soft eggs. If the hens are not noticed when they are in this state, and taken from the male bird, they often lose their life. They should be taken from the other fowls, and their legs held in hot or warm water, just so that the finger can stand it, with a little mustard in. It is well to rub the legs with a nail brush. When taken out of the water they should be rubbed quite

dry ; then a little turpentine rubbed in and a little vaseline applied after. This keeps the skin from drying and cracking. Then wrap the legs round with cotton wool or flannel, put on warm. Then place the bird in a basket quite out of all draughts, in a moderately warm place if possible. This usually cures them the first dressing, often they can walk well in six hours, if not, repeat the same.

They should be kept on moss-peat, or straw, and then a warmth rises to their legs, and the blood circulates freely again.

EGG-EATING.

Some hens are addicted to egg-eating, and as they clear away all traces of the eggs so neatly it is difficult to find them out, and if not found out and stopped at once the other hens soon learn the bad habit. If there is a suspicion of any eggs being eaten, an egg should be laid in the run and the fowls carefully watched. If some of them turn the egg over but do not eat it, it proves they are not egg-eaters, but if any of them commence breaking the shell, the egg should be at once taken away, and after removing the white a quantity of mustard and ammonia or some other hot substance should be mixed with the yolk, and the shell with its contents replaced in the run. This will generally help to catch the thief, but it is as well also to try putting an egg in the nest, as they often eat them there, and in this case would not be tempted by the egg laid down in the run, and so might leave that one alone. In most cases the taste of the mustard, &c., proves a cure at once, but it may be necessary to repeat the operation, with another egg treated in the same way. If this proves ineffectual the egg-eater

should be killed at once; if not, she teaches the others. Egg-eating is generally caused by soft-shelled eggs being broken, or eggs dropped from the roost and broken. The birds all rush to them at once and clear them up. Peat-moss is a good preventive, as it is soft to catch the eggs should the hens drop them from the roost. Another cause is the want of materials for shell-making, and if the birds are to be cured they must, of course, be supplied with these necessities, such as oyster-shells and bone-meal. I seldom have an egg eaten. If egg-shells are given they must be broken up very fine, or this will teach them egg-eating.

Egg-eating is a very serious matter. I have known people sell their hens because they said they did not lay, while almost every hen was laying at the same time, but the birds ate the eggs. I have had many gentlemen complain to me these last few years, saying their fowls did not lay. I asked them to watch the birds, and in every case they were in full lay, but ate all their eggs. At one place they ate about 15 a day, and yet the trace of an egg was never to be seen. If there is only one hen which eats the eggs it is best to kill her at once, unless she is very valuable. Most hens may be cured by cutting the horn of the beak at the tip, both bottom and top, so that the blood shows through the horn, and when they tap the egg it hurts them just the same as cutting one's nail down to the quick, but they can pick up their food just as easily and without hurting themselves. If a fowl is done carefully in this way it will usually cure it.

EGG-BOUND.

This is not a disease, but rather a misfortune, to which pullets and young hens are more susceptible than old ones. The cause of these accidents is that the egg-passage is too small to admit the egg passing through. Symptoms:—The fowl is often on the nest, and in walking the tail will touch the ground, while the head and breast are reared straight up. If they are not extra valuable and quite young, it is best to kill at once, as they are then in excellent condition for eating.

The best remedy is to dip a feather in salad oil and pass it up the egg-passage, and this generally causes the egg to be laid; care must be taken so as not to break the egg inside the fowl, as when this happens it is generally fatal. Sometimes the egg breaks of its own accord, and the skin remains in the fowl. This should be attended to at once with the finger; if not, it causes her to rupture herself by continually straining, and the oviduct, which is the egg-passage, comes right out. If the fowl is seen at once, and attended to, she may be saved. The passage should be rubbed with a little salad oil, and then gently put back again. The hen should be held head downwards, then the egg-passage will fall into its proper place, after which she should be placed in a cloth, or a roller-towel is best, suspended from the ceiling. The towel should be pinned so that the head of the fowl is four inches lower than the tail, the legs are partly upwards but the feet do not touch anything. If left in this way for 12 or 15 hours the oviduct will fall back into its place, and as a rule keep there.

The eggs hang round the ovary in a cluster, something like a bunch of grapes, and are attached to the backbone of the fowl.

Fowls, after being egg-bound, should not have soft food for several days, unless it is a little soaked bread and not much corn, this prevents the hen from laying, and the organs get quite strong again. If they are not attended to at once, inflammation takes place, and the hen suffers very much pain. When this is the case the birds should be killed at once.

Fowls frequently die when they have a soft-shelled egg in the oviduct, as it is so much harder for them to pass a soft-shelled egg than a hard one, especially when the former breaks and only the skin is left in. It is very seldom a fowl dies through not being able to pass a properly-shelled egg, but deaths from soft-shelled ones are frequent. The oviduct leads right up to the ovary, and there is a fine skin like a cobweb lying over the cluster of eggs already mentioned, which conducts the eggs into the oviduct before shelling. A sudden jerk of the hen's body, such as would be caused by flying from a high perch, sudden fright with a dog, or anything of that kind, ruptures the skin and the contents of the egg escape and mix with the intestines, causing inflammation and death sooner or later. There is no cure in such a case as this.

CROP-BOUND.

This is a common complaint, generally caused by carelessness or over-feeding, and sometimes for want of sharp grit. It generally occurs when the birds are in full lay, but if treated

at once, the stoppage is soon removed. The first symptoms noticed are that the fowl mopes about, often taking up the food and laying it down again, and drinking a great quantity of water. The crop feels hard, and the passage from it to the gizzard gets stopped. The best thing is to give the fowl two teaspoonfuls of salad oil and a little warm water, and some time after to gently rub the crop with the thumb and finger, so as to remove every particle of its contents. If the crop is not softer in three or four hours, the dose of warm water should be repeated, rubbing the crop as before; and if, in another four hours, the crop is still hard, the warm water, oil, and rubbing should again be repeated, and if ineffectual the only remedy left will be to open the crop and remove the hard contents.

The best way to do this is to lay the fowl on its back and get some one to hold her; and then to part the feathers down the centre of the crop, taking care not to pull any out if it can be helped, as they keep the cold from the wound. The incision should be made at the top of the crop, with some sharp instrument or small penknife, taking care not to cut any of the large blood-vessels in the outer skin. The hole should be about an inch long, or just long enough to remove the contents of the crop with the handle of a teaspoon. A little salad oil should be put on the wound round the inside before sewing up. It should then be carefully sewn up with silk, a fine needle being used. Each skin should be sewn up separately; it should be wiped dry and then a little vaseline put on the stitches. About half a teaspoonful of salad oil should be given to the fowl at once, as this heals the wound inside while the other does so outside.

The fowl must not be exposed to the cold for several days, and no water must be given for two or three days, or it will find its way through the stitches and wet the hen's feathers, and cause her to take cold, especially if in cold weather. The diet should consist of soft food, such as soaked bread given warm, and soaked corn; the birds will in many cases not even stop laying, the operation affects so slightly. Care should be taken in removing the contents of the crop, as sometimes there are pieces of glass, bone, or cinder inside. Very often, when fowls are crop-bound, they drink such an enormous quantity of water that the crop becomes full and remains so, hanging down like a bladder. When this occurs, the best remedy is to hold the fowl's head downwards, and press the crop so as to force all the water out, if not the crop will fall. The under skin gives way and lets the crop down, and when the hen walks it is in her way of stepping. This is what is termed a ruptured crop. Alum and water is the best outward application. Bathe it twice a day. If this is done in time it can usually be cured. A stoppage is often caused through the fowls eating long grass, or swallowing long pieces of hay. This accumulates and gets bound into a ball in the crop and partly causes a stoppage in the passage leading to the gizzard, and at the same time causes a little inflammation inside. The fowl becomes thirsty, drinks too much water, and the crop falls from the body, as it is only kept up by the skin of the fowl. When it once falls it seldom gets back into its proper place. Sometimes when the crop is cut open it is necessary to get hold of the long pieces of grass or hay, a little at a time and twist it, the same as one

would a hay band, then draw it out a little at a time. When an incision is made the crop should be held with one hand or it will turn round. It is difficult to find a hole in the crop unless something is put in at the time such as the handle of a teaspoon.

SOFT EGGS.

Poultry-keepers are often troubled with fowls laying soft eggs. There are several causes. It may be for want of shell-making material, but not this in all cases. Sometimes when hens have been laying a large number of eggs, they make eggs faster than Nature can shell them. I have had fowls lay one perfect and one shell-less egg in twelve hours. I have frequently had them lay one shell-less egg in the night and a perfect one early the next morning. This is not an exception, but often occurs where good layers are kept. I thought it was impossible for a fowl to lay two perfect eggs in 24 hours, or rather to shell them in that time; but I have proved it is not, having had them do it—pullets under eight months old. Fowls are not always out of order when they lay shell-less eggs, as many think they are; that is, if they are supplied with everything necessary to form the shell and keep the egg organs in a healthy state. A fowl often lays double-yolked eggs. This weakens the egg-organs, and sometimes causes soft eggs to be laid. When fowls are over fed and become very fat internally, they often lay soft eggs; also when they have been laying a long time without a rest their egg organs naturally get weak, especially if they are large eggs. Their oviduct, or egg-passage, is wonderfully constructed.

It is attached to the ovary (this is where the eggs first form). They hang much the same as a bunch of grapes, and can be seen by a microscope when not larger than the point of a pin. They are so constructed that the largest are at the bottom of the ovary, or rather they are encased in a skin, and as they grow they lower themselves into the top of the oviduct. After the egg is severed from the ovary it has to pass through the oviduct or egg-passage, which is from 12 to 19 inches long. I have found it 7 inches longer in some fowls than in others. In some it has been known to measure 23 inches. It is while the egg is passing through this pipe, or passage, that it becomes shelled.

The egg-passage does not lie in one straight line, but is constructed much the same as the entrails of a fowl are, rather more of a **S** or pothook shape. If an egg is examined in a fowl before it leaves the ovary there will be found some small blood veins upon it. These leave the egg before it passes into the oviduct. Should a hen be startled or very much frightened, or over-reach herself, the little blood-vessels become ruptured. This is the cause of small, dark spots being found in a new laid egg; they are usually found at the large end of the egg, not in the yolk, but at the top of it, just between the yolk and white. Sometimes it is caused by the male birds being too heavy. When these spots are found in a boiled egg people think they are not new laid, and that they have been sat on. In some cases they are as large as a pea. After a hen has been very frightened, sometimes a shell-less egg breaks in the egg-passage. When this is the case the fowl may be seen standing very erect, with

tail down and head up. The feathers are usually wet behind, while the other part of her plumage looks very rough. If not attended to fowls often die when this occurs. They are usually found dead on the nest, and the cause of death is frequently put down as egg-bound, when it is really the skin of the soft egg left in the egg-passage. This irritates the fowl and causes her to strain, as she cannot pass it. This causes a rupture of the egg-organs, and often of the body too, and is sometimes the cause of the laying-hen being so large and down behind. When any of these symptoms appear, the hen should be caught and examined. The skin of the egg can usually be found just inside the egg-passage, occasionally it is already protruding; if so, it can easily be withdrawn by gently pulling it when the hen endeavours to pass it. It must be done very steadily, if not, it will break inside. When it is broken inside it can be withdrawn by tweezers; a small piece of linen rag should be tied on the end of the tweezers and a little oil put on the rag. When this is done, it is not so likely to break the skin or hurt the fowl. If this precaution is not taken, inflammation follows. This is partly caused by the hen straining herself. She should have a teaspoonful of salad oil and a little warm water given her, also a little hard corn, so that she does not lay any more eggs until the oviduct is strong again. If so, it causes irritation and the bird becomes very ill. Ground oyster shells are excellent things for laying hens, as they answer two purposes, viz., supplying material for making the shell, and helping them to digest their food. Old mortar and cinder-ashes are useful for them to pick up. When all

these remedies fail, bone meal should be given, as this strengthens the egg-organs, and helps the body generally. Flint dust mixed with soft food is also a fine thing for the laying hens, as this will prevent them laying shell-less eggs when everything else fails, and especially in the breeding season, as it makes the shell of the egg more brittle, and the chickens are able to liberate themselves much better. In the spring and summer I use flint dust with a little ground oyster shell mixed in the soft food every day; in the autumn and winter three or four times a week. One single handful is sufficient for 25 to 30 fowls. A very small quantity will keep the organs in good order. If only given them three times a week it helps them very much.

COMB DISEASE.

This disease is rather a peculiar one, or perhaps I ought to say it comes in various forms and from various causes, and is very troublesome when it attacks the fowls. I cannot say what it arises from in the first place, whether it is a chill of the blood or overheating. I think both. When a fowl is killed and the disease is well developed, the blood is almost black, but at the same time the cause cannot always be traced, as in some cases when the fowls have diphtheric roup very badly comb disease comes on. Of course this is when the fowls are to all appearance in perfect health. I have known them lay when they have been almost blind with the comb disease. In many cases it does not affect the fowls' appetite if taken in time. If the fowls have a touch of liver disease death is almost certain, but if free from this they can be cured and the disease stamped out. The symptoms

do not always show themselves in the same form, but in most cases it appears in little white spots on the comb, sometimes on the eye and wattles, and in a few cases on the neck, but the latter is very rare. It should be attended to at once, as it is very contagious. The affected birds should be removed quite away from the others. As these white spots develop, after 36 or 48 hours they become much the same as warts in appearance, and as they get worse they come like a fungus and spread rapidly if not checked. When they appear round the eyes they entirely close them in about three days. I have tried many things for this disease. As an outward application I have found nothing better than Jeyes' Disinfectant. It is a liquid, and I have found it a certain cure if the fowl has no other disease. A feather should be stripped within half an inch of the end, so that it does not hold too much, and just touch each place, so that the liquid does not run down too far, as it is very strong. Should it run on the fowl's face or comb, where there are no spots, it should be wiped off with a piece of linen rag immediately. Each spot should be touched with oil; salad oil will do. Every bird should have not less than half a teaspoonful of Roup Powder in one day; in bad cases three parts of a teaspoonful is not too much, especially if the affected bird is a cock. It is well to mix the powders with a little flour and oatmeal, not less than a teaspoonful of each. If the patient is very ill, and cannot eat, a double quantity of meal may be used, as food they must have. Give each fowl one teaspoonful of salad oil for the first two or three days. When the fowls are taken ill it is advisable to dress them twice a day, and

also give the pills above mentioned. After they reach the turn once a day is sufficient. If the above remedies which I have mentioned are given, the spots will come off like scales, quite clear, so that the comb and face get well again, and nothing can be traced. If neglected it is almost certain death, and will become a fearful epidemic, as it is so contagious. If persons have not Jeyes' Disinfectant at hand, paraffin will answer the same purpose, only it is not quite so powerful. In all cases when symptoms of this are noticed give the affected birds a quarter of a teaspoonful of Epsom salts, and the unaffected birds one teaspoonful to every eight birds, and the following day one teaspoonful to twelve birds. If fowls have anything the matter with their liver, followed by this complaint, they fall victims to it. In bad cases of comb disease, diphtheric roup often sets in at the same time, so that a good deal of cheesy matter will be found in the mouth. Where there are many fowls kept it is best and safest to kill the birds which are affected with it at once in case of it breaking out in other pens; or take the birds quite away. It is well to purify each bird in the house in which the disease broke out. The best way of doing this is to add one teaspoonful of Jeyes' Disinfectant to one pint of water, and sprinkle it in the feathers; or a better way is to rub part in with the hand, sprinkle the other about the fowl-house, and give the unaffected fowls some roup powder. Proportion: one teaspoonful to six hens. When treated in this way it seldom spreads any further, if taken in time, and a preventive is better than a cure. It is well for all poultry-keepers to acquaint themselves with the symptoms

of diseases, and then if any disease appears in their poultry they know how to treat them. If they keep clear so much the better. I have known £50 worth of fowls die in a fortnight of this disease for the simple reason that their owners did not know how to treat it.

During the last few years quite a fresh disease has cropped up among poultry in both town and country. It comes in the shape of small white spots on the comb, altogether different to comb disease, though it is often taken for the latter. It has the appearance of flour or mildew, and spreads all over comb and face. When these white spots appear they should be saturated with paraffin so that it does not run on the feathers ; wipe dry, and apply ointment (that which is usually called scaly leg ointment). As a rule the second dressing entirely cures. In many cases it does not affect the bird's health in the slightest unless it is very delicate. The complaint is called eczema, and in a few instances it has been known to spread over the whole body, but it very rarely does this. Sometimes a great many of the feathers drop off round the neck and body, but that is usually where people make a mistake and put too much paraffin on, so that it runs on the feathers. Care should be taken in dressing with the paraffin and ointment.

FEATHER EATING.

This habit is very common with fowls, especially those that are confined in small runs, and in a few cases where birds have a large range they will carry it on, and if not checked early it becomes very serious. I have seen fowls quite naked about the neck, breast, and back, and in the summer they

will peck each other till the blood runs. I cannot always account for feather-eating, but neglected fowls are most subject to it. A good supply of green food and oyster-shells and a little corn scattered in runs with soil sprinkled over it, are excellent modes of giving the fowls exercise and keeping them employed. Of course this is a good thing, but it does not always stop them from feather-plucking. The best way of finding them out is to stand some distance away, out of their sight, when the sun is shining, and the fowls are cleaning themselves; then the feather-plucker does her work. They generally commence in the spring on the feathers about the head, this is caused by their pecking at the nits from vermin, which are generally found round the head and upper part of the neck. The fowls persist in pecking at the nits until the feathers come out, when they at once swallow them and repeat the operation. In a few days the quills begin to grow, and the feather pluckers observing the quills with the moisture in them, which consists principally of glutinous matter, peck them out also, and therefore keep the fowls quite bare if left with them. The first thing to be done towards effecting a cure is to remove the feather-pluckers at once, and place them in a coop by themselves for a fortnight, and, as a rule, this will cure them. If, however, they persist in feather-plucking after they come out, they should be put in with a bird that has Jeyes' Disinfectant diluted with water put upon its feathers at about the spot they have previously picked in others. Steps should, of course, be taken to rid the other hens of the nits on their feathers, as described in the paragraph on vermin. If this fails their beaks should be cut. A small piece should

be cut off the end of the top beak and the sharp edges of the sides of the same and the edges of the bottom beak also. They cannot pluck the feathers, as when they go to pick them they slip through their beak. This is a certain cure. It does not prevent them from eating their corn. Care should be taken not to cut too deep, and then it does not hurt the bird in any way.

CONSUMPTION.

There may often be noticed two or three chickens moping about with long beaks and pale faces, while their wings appear too long for their bodies, often drooping to the ground, and the chickens are sometimes too weak to stand. Dorkings and Hamburgs when bred-in too much are very liable to this disease, and when other birds are affected it is often for want of fresh blood in the poultry yard. If taken in time, the chickens may recover, but as they are seldom of much good, and take up the room of healthy birds, it is the wisest plan to kill them at once, as it saves much time and trouble. Cod-liver oil is the best thing to use for those desiring to try and effect a cure—quantity, a quarter of a teaspoonful to a chicken six weeks old. Occasionally a hen may go in consumption, and I have known cocks to do so. The symptoms in the old birds are much the same as those in liver disease, only they do not eat very much food; when they have liver disease they eat twice as much as an ordinary fowl, so to one that is observant they are easily detected.

DIARRHŒA AND DYSENTERY.

The cause of diarrhœa cannot always be traced, as it arises from various causes. Sometimes it is debility; at

others it is a thunderstorm. Very stale meat will bring it on, or corn or meal that have been lying by for a long time, and the mites have taken their share out of it. Corn that is full of small holes should not be given to poultry; if it is, other good corn should be mixed with it, as what are commonly called mites have made these holes, and taken most of the nutriment out of the corn. If fowls are short of sharp grit, the liver does not act properly, and this brings on diarrhoea, and very often fowls will swallow pieces of glass, stone, or coal, and the inlet to the gizzard being about three times the size of the outlet frequently these hard materials get through the inlet, but stop at the outlet, and cause a stoppage, and the husks of the corn get matted together into a hard mass, which is most difficult and well-nigh impossible to disperse. This causes violent diarrhoea, which frequently proves fatal. It is always safe to give fowls salad oil in such cases. A teaspoonful and a half for a hen, or two teaspoonfuls for a cock would not hurt them, and often is the means of saving their lives. Their excrements are of a yellowish colour when this is the case. If fowls are fed irregularly (*i.e.*, half starved one day, and the next a quantity of food allowed to lie by them), and also kept short of water, they become very thirsty, and when they have the opportunity they drink a large quantity of water. This not only brings on diarrhoea, but also ruptures their crops. Bread soaked in hot water and given to young chickens will bring it on. Bread should always be soaked in cold water for young chickens. Dry rice and a little raw meat chopped fine is a capital thing to stop diarrhoea in

young chickens. If this complaint is not stopped or rather something given to the birds to relieve it, they become very thirsty, and lose their appetite, and their plumage looks rough, and at the same time they move about very stiffly as though hurt in some way. Broody hens are very subject to this complaint, as they usually drink too much water, and do not have sufficient grit to digest their food. The hen leaves her nest, and in many cases dies. There is not only the loss of the hen, but also the eggs, and disappointment of losing the prospect of chickens for the want of knowing how to treat her. She should be fed on dry rice and maize. Very hot weather will bring diarrhoea on in chickens. When this is the case, they ought not to have water, but the food must be soft, and a greater part of the corn soaked in water or boiled. When a hen has diarrhoea she ought to have a teaspoonful of castor oil given her. A cock should have one teaspoonful and a half (chickens in proportion to their size). Also give one heaped-up teaspoonful of powdered chalk, and half ditto of ground ginger. In addition to this, I give a quarter of a teaspoonful of Roup Powder a few hours after to each adult bird. I have not known this remedy fail yet. It is very seldom it has to be repeated, unless the fowls are very much out of order. If a fowl will eat, the ginger, &c., can be mixed in the soft food; if not, it must be made into pills with a little baked flour; not oatmeal. Sometimes if a fowl is neglected, dysentery sets in. In this case, use about five drops of chlorodyne for a hen and seven for a cock. It is best given on a piece of loaf sugar; sometimes it requires two pieces. A

teaspoonful of water should be given after ; not quite cold, just tepid. When fowls have diarrhoea, it usually leaves them in rather a weak state. They should not only have a tonic, but also a stimulant. The Roup Powder will be found one of the best things to get the fowls' strength up again. It brings them along quickly, and they are usually in full lay in a week or two. For a day or two the patient should not have much corn, but chiefly soft food. A little corn should be given, as that does not pass through them so quickly, and it helps to stay the other food. I have not found the chalk and ginger fail for young chickens. A brood of ten from a fortnight or three weeks old can have about the same quantity as prescribed for a hen. It can be given according to age. If they have a little overdose it will not hurt them.

DROPSY IN THE ABDOMEN.

This disease is not often found in the poultry yard, not one out of every hundred that are kept. The symptoms are : the fowl stands about very much by herself, and does not care about eating soft food ; is very inactive, and large behind. In bad cases they are very large, and sometimes a little lame. The comb does not usually lose its redness ; they look very much like a fowl which is ruptured. The abdomen is very soft when examined, and the bird is very heavy. When they are in this state they should be tapped. This can be done by making an incision about three inches from the passage, that is just under the thigh, rather low down on to the abdomen. A small incision should be made with a lance or sharp penknife.

The first skin should be cut through carefully, and the second skin looks very much like a bladder, that is, with the water pressing against it. After this skin is cut through the water will spurt. I have tapped hens and taken from $\frac{3}{4}$ to $1\frac{1}{4}$ pints of water from them. The hen should be held for a few minutes for the water to drain out; then let her stand upon her legs, and hold her by her wings, and in the struggle to liberate herself she forces the water from her inside. The feathers should be wiped as dry as possible, and a little vaseline put on the incision. Then it should be sewn up with a fine needle and silk. There may be a few drops of water drain out after it is sewn up, but it will soon cease. Two or three teaspoonfuls of cold water should be poured down the hen's throat, and a Roup Pill should be given. This acts as a stimulant to the bird. Put it in a basket or coop for two or three days, longer if in cold weather. If free from liver disease, the bird will be quite well in a few days. A fowl that suffers with liver disease is very subject to dropsy. If a bird is only a common one it is not worth the trouble.

INFLAMMATION OF THE LUNGS.

This is usually brought on through sudden chills. I have tried many remedies for it, and have found warm stewed linseed one of the finest. Give a few spoonfuls as warm as the fowl can take it, and keep the affected bird in a warm room. One teaspoonful of glycerine should be given once a day. I have been trying an outward application for this, and also when there is a little cold on the lungs, and have found it answer very well. The region of the lungs

should be painted with Iodine ; the proper place will be found under the wings where the body looks naked. Before painting, the operator should watch till he sees the movement of the lungs, and then paint over the exact place. It is well to put a little vaseline on after the Iodine, if not the skin may crack. The operation should be repeated several times if required, but, as a rule, it relieves the bird at once. The symptoms are—the breathing is very bad, and at the same time the mouth is partly open, and the birds appear to be in great pain, and usually drink a quantity of water if not very bad. If not relieved they frequently close their eyes. It is not always inflammation, but a cold, and the bronchial tubes are a little stuffed with fluid. I have found them full of coal-dust or soot when I have made a post-mortem examination, especially fowls that have been bred in a town. I have mentioned the remedies which may be used, whether it is inflammation or a cold. Fowls after having recovered from this complaint should be taken care of and not be allowed to run out into the cold air.

Fowls which are handled frequently open their mouth and breathe hard. This is from fright. They should always be handled as gently as possible, both the old and the young ones. When they are being treated as I have described, they should be fed on soft food.

VERMIN.

When fowls are troubled with vermin they never do so well, particularly chickens, and I have referred to this subject many times in my writings in various papers, as it is most important that poultry should be kept quite free from them.

When the chickens do not thrive, without any apparent cause, the best way is to examine them for signs of vermin about the head and neck, as it is on these parts that the nits or eggs mostly appear. If any should be found, Neats-foot oil and turpentine mixed together are good remedies, and these should be rubbed well into the feathers round the head and neck. This destroys the nits. And the insect powder is a safe remedy for destroying the live vermin upon the fowls' bodies. It can be used on chickens of all ages, and is a certain cure. It does not injure the fowls as many other things do, such as lime, snuff, &c. These are apt to blind the birds.

The fowl should also be laid on its back, and the whole of the body, and especially the under part of the wings, should be thoroughly dusted with the powder, all the feathers and skin being entirely covered. The fowl should then be placed where it can have plenty of clean ashes to thoroughly clean itself.

When fowls have a plentiful supply of ashes or dust to clean themselves in, they are rarely troubled with vermin.

It is when hens are sitting they usually breed these. Dust them well with powder.

Old stock cocks should be thoroughly examined two or three times a year, as they do not clean themselves like the hens do; the vermin in these cases usually lie round the abdomen. In the hot weather they will be found all over the body. Occasionally when chickens get from three days to three weeks old they have a tick on the back of the head, which is almost sure to kill them. It is, therefore, wise if there are any symptoms of chickens dying without

any apparent cause to examine them, and if a tick can be found a little nit ointment should be rubbed in at once. There is another kind of vermin which trouble the fowls very much. That is small red bugs, which get in the cracks of the perches and in the bark. The latter are found more particularly in the old fashioned fowl-houses, but they can be found in some of the new ones also (I mean on the barked perches). If the perches are not kept clean, the little vermin hide themselves in the wood, and suck the blood from the fowls at night, which irritates them very much. New perches fitted to the house should be saturated with paraffin.

BUMBLE FEET IN FOWLS.

Poultry often go lame and in many cases the owner or attendant has not the slightest idea what is wrong. Adult fowls are more subject to this ailment than young ones. When chickens go lame it is usually through rheumatism or gout, but with adult birds the feet will begin to swell underneath. This is usually caused through a bruise in the first place. Sometimes the feet will swell between the toes a quarter of an inch higher than the toe itself, and in some cases the feet get cut underneath and the place gets filled up with dirt, which keeps accumulating until with the heat of the foot it becomes quite a hard substance, with a skin round it, just the same as a piece of scrofulous matter. As soon as a fowl's foot commences to swell it is best to catch the bird and examine it, and should there be any dirt between the skin it should be pressed out. In many cases the bottom of the foot will become bruised from the bird flying off a high perch on to the ground. If this is taken

in time and the bottom of the foot is dressed and poulticed with bread or bran, either will do, it will usually draw the inflammation out and the foot gets well again. It should be poulticed about twice a day for a couple of days, then the bottom of the foot should have Spirits of Arnica rubbed upon it, after which a little vaseline is a good thing to soften the skin, and, lastly, a piece of linen should be tied carefully round the bottom of the foot. If a little care is taken in the first instance, bumble feet can easily be cured, but when neglected the sinews extend very much and a cheesy matter forms between the bones and sinews, which in time gets quite hard. When a cock bird is afflicted with bumble feet, unless he has a very soft grass run he is very little use for stock purposes, as the eggs are very rarely fertile till the middle or end of April. Fowls which have bumble feet feel the cold and a change in the weather very much.



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Another way is to butter the eggs as soon as they are laid, and lay them in tissue paper and set them on the small end. If buttered when warm they will keep four or six months quite fresh.

A very simple plan for keeping eggs is to have shelves made so that the eggs can stand in an upright position. Small holes, of course, have to be made in the shelves for the eggs to stand upright in. In this way they can be kept from two to six months, and they will be perfectly fresh.

In all cases where eggs are intended for putting by for the winter, they should be collected from the nest twice a day, if not those which are laid first thing in the morning, and are kept warm all day by the hens, have germinated, and they will not keep. The germ becomes putrid. This is one reason of so many eggs going bad.

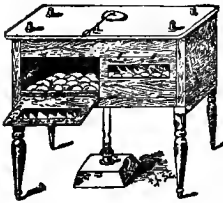
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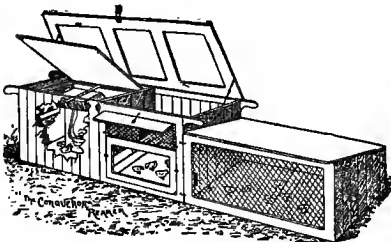
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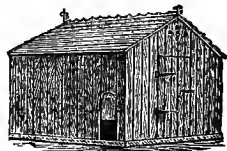
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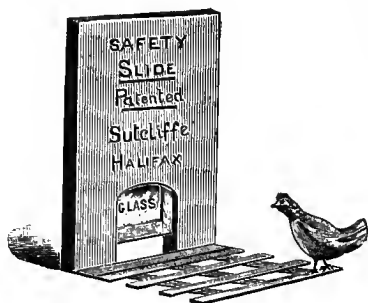
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W. COOK & SON'S POULTRY POWDERS.

These Powders are an invaluable composition for Poultry under all circumstances. They are prepared especially to act upon every organ of the body, being stimulating, strengthening, and warmth-giving—in fact, they counteract many diseases Poultry are subject to, improve their appearance by imparting a gloss and beauty to the plumage, and keep the fowls in good health by preventing colds and hardening the birds against the severe and constant changes they are subject to in this climate.

They are especially useful to birds while moulting, when there is a great strain upon the system in the growth of the young feathers, and they are down in condition and need something to help them. They are also useful in cases where fowls mope about and do not care for their food; being a little out of sorts. The powders will be found most beneficial by acting upon the liver, and bringing the birds on to full lay. Those who use them are seldom without eggs all the winter months. They are used very largely and have proved a great boon to poultry-keepers. They do not over-stimulate the fowls and leave them weak, like most other tonics do. They strengthen every organ of the body, and can be discontinued at any time without any injury to the fowls. I have used them for more than sixteen years, from August to April, about four or five times a week; if the weather is severe I use them every day. Many people have used them all through the summer of the past few years with excellent results; they do not injure the birds in the least or wear them out sooner, as my customers testify. I have not been without eggs for more than sixteen years, even in the most severe weather. The same Powders are used for bringing up young chickens, turkeys and pheasants, and this year they have been used with great advantage for young ducks; they have a good effect on all young poultry, assisting them in their growth, getting their feathers, and giving them health and vigour.

The quantity to be used is a full teaspoonful for eight full-grown fowls, and chickens proportionate to age, given from three to five times a week, with the morning meal of soft food; it is best to mix the Powder in the dry meal previous to adding the water, or it can be mixed in any kind of soft food. When the fowls are in full lay, or the weather mild, the Powder may be omitted for a week or so. A change does them good. I cannot state exactly the time to give it to young chickens, but early-hatched ones require it oftener than later-hatched, as the former suffer much from cramp, cold, &c., according to the weather. The use of it must depend upon the feeder's judgment.

These Powders are sent to all parts of the world. They help the fowls to produce eggs in the coldest weather, and also when kept in close confinement eggs are produced in abundance. Where many did not get an egg for three months together, since using the powders they are never without them.

Sold in tins, post free, 8½d., 1s. 3d., 2s. 4½d., 5s., and 12s. tin for 10s.; also supplied in larger quantities in linen bags at a reduced rate. Cash to accompany all orders.

W. COOK & SON'S ROUP POWDERS.

PRESCRIPTIONS FOR MAKING UP THE PILLS.

FOR THREE HENS.—One heaped-up tea-spoonful of the Powder, two ditto of flour, two ditto of oatmeal, two ditto middlings or any kind of meal, with a small piece of fat of some kind, about the size of a walnut ; mix with a little warm water into a paste, so that it does not stick to the fingers. The pills should be made about the size of the little finger to the second joint. Give two pills night and morning. If the fowls have the disease very badly, a little extra powder can be used without injuring the fowl in any way. Though very strong, it is not poisonous. If the invalids cannot eat, they should have something nourishing, such as bread and milk or stewed linseed, given warm. Always let them have as much food as they can digest. When the fowls first show symptoms of roup they ought to have a teaspoonful of castor oil given to them, and half a teaspoonful of glycerine ; even when they show signs of a cold they can have this given them. Isolate affected birds, and add camphor to all drinking water. Give the unaffected birds the Roup Powders in their morning meal—one heaped-up tea-spoonful to ten fowls. This will often stop the malady from going further. On a cold or damp day a little of it is most valuable. When fowls are going on a journey, a pill or two will often prevent them from catching cold. Many exhibitors use it and find it most beneficial. A preventive is better than a cure. It has saved the lives of thousands of fowls all over the world. In many cases it has cured them when all other advertised remedies have failed. If fowls are suffering from lowness, or their liver is out of order, it soon puts them right and brings a bright lustre on their plumage, which improves them very much for the show pen. When a fowl has a rattling in her throat and difficulty in drawing her breath, give her a teaspoonful of glycerine, and when convenient stew some linseed and give from six to eight teaspoonfuls warm. Keep the affected birds on straw or moss peat ; the latter is much the best. When the birds have swollen eyes bathe them in milk and water with a little camphor in it. Always wipe the face and eyes dry ; if not, they catch a fresh cold. When a fowl has a thick discharge, called mucus, which corrodes round the tongue and throat, use the lotion, 9d. per bottle, per post 10½d. Directions for use of same :—Take a feather, which dip in lotion, apply to the bird's mouth and throat, turn the feather well round the mouth—in this way it will bring much of the thick slime away. In bad cases it requires a second feather to repeat ; then it is well to take a feather and dip in glycerine and also mop out mouth with that. This heals the wound. If this treatment is continued night and morning, the reward will be the bird's recovery.

Sold in tins, post free, 9d., 1s. 3d., 2s. 4½d., 5s., and 12s. tin for 10s.

W. Cook & Son, Orpington House, St. Mary Cray.

INSECT POWDER.

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W. COOK AND SON'S Improved Insect Powder will destroy all insects on poultry, pigeons, cage birds, dogs and cats; also destroys black-beetles, and is used largely for household purposes; its use is indispensable in keeping the nest and sitting hen free from insects; is perfectly harmless. Should be freely used just before hatching, both on the hen and in the nest, as it is impossible for chickens to thrive when covered with vermin. Sold in tins, post free, 8d. and 1s. 3d.; or 5s. tins, carriage paid.

W. COOK & SON'S FATTENING POWDERS.

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These powders are very useful in assisting poultry to put on fat and to keep them in health at the same time; they give them a keen appetite, and assist digestion.

For 12 Fowls, one dessert-spoonful three times a week

„ 10 Ducks, „ „

„ 6 Turkeys „ „

Sold in Tins, post free, 1s. 3d., 5s. and 10s.

SPECIAL QUOTATIONS FOR LARGER ORDERS.

W. COOK & SON'S OINTMENT FOR SCALY LEGS,

Sold in 6d. and 1s. boxes. Post free 7½d. and 1s. 3d.

W. COOK & SON'S EMBROCATION.

Sold in 6d. and 1s. bottles. Free by post for 8d. and 1s. 3d.

W. Cook & Son, Orpington House, St. Mary Cray.

W. COOK & SON'S PRICE LIST OF MEALS & CORN.

	1 cwt.	$\frac{1}{2}$ -cwt.	$\frac{1}{4}$ -cwt.
Biscuit Meal	17 0	8 10	4 8
Special „	15 0	7 9	4 0
General „	12 6	6 6	3 6
Bone „	14 0	7 0	3 9
Duck „	14 0	7 6	4 0
Fattening Meal for Ducks	14 0	7 6	4 0
Granulated Meat	21 0	10 6	5 6
Meat Dog Biscuits	14 0	7 6	4 0
Ground Oyster Shells... .. .	8 0	4 6	2 6
Flint Grit	12 0	7 6	4 0
„ Dust	8 0	4 6	2 6

Delivered free to any Railway Station in England. Half carriage paid on 1 cwt. bags to customers in Ireland and Scotland.

	Sack.	$\frac{1}{2}$ -Sack.	Bush.
Wheat (best)	19 0	9 6	5 0
Buckwheat (best French)	18 0	9 0	4 6
Barley	18 0	9 0	4 6
Maize (small round)	18 0	9 0	4 6
Dari	18 0	9 0	4 6

Groats (whole) extra quality, 19/6 per 112 lbs. ; 10/- per 56 lbs. ; 5/3 per 28 lbs.

Carriage paid **ONLY** within the delivery of Carter Paterson & Co.

Orders for **CORN** cannot be executed unless a remittance for Sacks or Bags accompany the Order.

Sacks charged 1s. 4d., 1-bushel bags, 6d., and allowed for when returned to London Warehouse, 105, Borough.

FLINT GRIT.

Sharp grit is most essential to all birds, as it is their only means of digesting their food and they cannot thrive properly without it. **FLINT GRIT** is the best material that can be used. W. Cook and Son supply **FLINT GRIT** broken in proper sizes for Fowls, Turkeys, Ducks, Pigeons, Chickens, and Cage Birds, and it is all broken by hand, as Grit broken by a machine loses the sharp edges it is so necessary to retain, and 28 lbs. of hand-broken flint will last Fowls longer than 112 lbs. of flint broken by machinery. **FLINT DUST** is also invaluable for laying Fowls and Ducks, it being strengthening to the egg organs.

W. Cook & Son recommend both the **FLINT GRIT** and the **DUST** to be mixed in the Fowls' soft food, waste thus being prevented. Fowls require about half a teaspoonful each weekly, of the Grit, and when in full lay three teaspoonfuls of the Dust daily to about to hens will be sufficient.

**W. COOK & SON, Queen's Head Yard, 105, Boro', London
and Orpington House, St. Mary Cray, Kent.**

GERMAN MOSS PEAT LITTER.

—:O:—

Moss Peat instead of dust, ashes, or lime in the house, is the greatest boon to poultry keepers of anything that I know. It saves time, keeps the houses clean, and is in every way a comfort to the fowls themselves. If the houses are cleaned out four or five times a year, it is quite often enough, as the peat does away with all smells, an occasional stir-up being all that is required. When once used, a poultry keeper would not be without it for anything.

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—:O:—

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—:O:—

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Pure bred birds of all varieties can be supplied all the year round, either singly, in pens, mated, or large numbers. Hens or Pullets from 7/6, 8/6, 10/6, 12/6, 15/6, 21/-; 30/-, £2 2s. to £6 6s. each. Cocks or Cockerels, unrelated, 8/6, 10/6, 12/6, 15/6, 21/-, 30/-, £2 2s., £3 3s. to £8 8s. each. Birds for farm-yard purposes at low prices. Cross-bred Pullets, 5/6 and 6/6 each. Special prices given for Birds for Exhibition purposes. Foreign orders executed. Send for our full Price List of Birds, Eggs, and Poultry Specialities, Post Free.

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ORPINGTON HOUSE, ST. MARY CRAY, KENT.

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DUCK MEAL.

I HAVE brought out a Meal especially for Ducks, but have not offered it to the public till now. I have used it myself for many years, and have every reason to believe that it is the best meal that has been manufactured for Ducks. I do not know anyone who has got his Ducks up to the weight at the age of mine. Perhaps there may be some, but I have not heard of any. I am sure those who feel inclined to give this Duck Meal a trial will be more than satisfied with the result. It mixes without sticking, there is no waste whatever, and the Ducks are very fond of it. It does either for rearing the young Ducklings or for stock Ducks, but I like to use biscuit meal the first fortnight the young ones are hatched.

The Prices for the Duck Meal are as follows :

14s. per cwt. ; 7s. 6d. per $\frac{1}{2}$ -cwt. ; 4s. $\frac{1}{4}$ -cwt.

CARRIAGE PAID TO ANY COUNTY IN ENGLAND.

I may say it is made up of the most nutritious materials, including a great deal of meat, bonemeal, and oatmeal. I do not wish to imply that other Duck Meals are not good.

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Queen's Head Yard, 105, Borough, London,

AND

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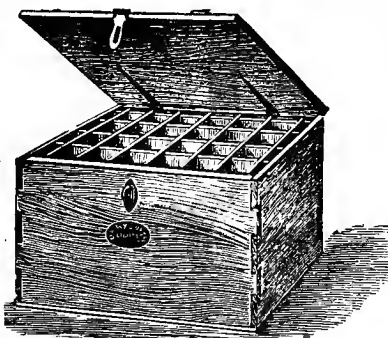
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The Strongest and Cheapest Box in the Market.
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This Meal should be mixed with water about an hour before it is required.
Mix to a crumbly consistency and do not give too hot.

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